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Bowdoinham Comprehensive Plan

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INTRODUCTION

The Town's Comprehensive Plan was created in response to the State's Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.) that directed the town to encourage orderly growth. It is important to note that the word chosen was to "encourage" not "require" or "prohibit". It was meant to find ways to provide incentives to reach a result that the community desired rather than to dictate a course to be followed. This emphasis on 'encourage rather than 'require is central to Bowdoinham's plan and any ordinances that proceed from it.

At the most basic level, the reason behind the Comprehensive Plan is to preserve and promote a sense of community. It is true that the term 'sprawl' and increased cost of municipal services get a great deal of mention in justifying the need for a comprehensive plan. In Bowdoinham, the village is fully built out. Except for working landscape of farm and forest, sprawl has in fact occurred in the rural area over the last 30 years. Future development will soon use up the remaining road frontage. But because Bowdoinham is a very vibrant community, and the comprehensive plan seeks to protect and promote that vibrant community, this plan should be seen as valuable.

The vibrancy of a community is measured by the interaction of its members with each other. In Bowdoinham, much of this interaction is the unintended consequence of volunteerism that adds so much to the texture of the town. The annual plant sale, the past 4th of July Barbecue, the Thrift shop, the many various municipal boards, the fire department and the large number of parents involved with the school as volunteer coaches are examples.

Interaction among the community members is also an important but unintended consequence of having places where we accidentally meet- such as the general store, the gas station, restaurant, the old post office, recycling barn, community school, government functions, and town landing. It is important for a community to maintain such centers that reinforce a sense of place, and provide a place for chance meeting and interaction

Those who have businesses in town intended only to earn a living but insofar as what they do creates a product used by others in the community, the accidental by product is an informal interaction among people and therefore a strengthening of the fabric of community. The town has carpenters, masons, electricians, welders, book-keepers, accountants, lawyers, painters, lawn care providers, loggers, foresters, fishermen, farmers, a soap maker, surveyor, toy maker, cabinet maker and many others. As we meet each other by working for each other, we retain a measure of that community of 100 years ago that was formed by a network of interdependence.

Recreation also promotes a sense of community whether through realizing that Bowdoinham is favored with many special places, such as the Bay,

rivers, woods or because of the interaction among people enjoying each other's company.

The comprehensive plan seeks to promote those features that provide for this sense of community. These would include home occupations, the general store, recreational opportunities, the community school, and those other aspects of the town that make it what is generally agreed is a nice place to live.

POPULATION AND DEMOGRAPHICS

Historical Factors Influencing Population Change

Bowdoinham has seen long cycles of population increase and decline. Factors influencing population change include employment opportunities, national economic trends, transportation infrastructure, reproduction, and aging. Bowdoinham's population grew from its first settlement in 1623 to a peak of 2,382 persons in 1850. Agriculture, fishing, and shipbuilding anchored the local economy. The Civil War marked the end of Bowdoinham's first period of expansion. Demand for ships constructed in Bowdoinham declined in the late 1800s. At about this time textile and apparels manufacturing began a sustained period of growth in nearby cities like Lewiston, Auburn, and Brunswick. This attracted population growth into the early 1900s.

The emergence of manufacturing coincided with agricultural mechanization and greatly improved systems for interstate movement of agricultural products. The shift of employment from farms and shipbuilding to factory work in larger cities may help to account for the gradual and irregular decline of population in Bowdoinham between 1850 and the 1930's. The decline ended in 1930, but the population has only recently reached its 1850 level. A new population peak may be reached in the coming decade if current trends continue. Improvements in roads in the region have permitted Bowdoinham to become a viable place of residence for persons working in Augusta, Portland and Lewiston.

Even so, this second growth phase may give way to another period of decline, this time fueled by population aging after the year 2015. Population in the future will be strongly affected by migration flows into and out of the town.

Analysis

Demographic and Social Characteristics

Table P-1 summarizes some demographic, social and economic characteristics of Bowdoinham and Sagadahoc County residents. In many respects Bowdoinham, which constitutes 6.7% of Sagadahoc County's population, mirrors the region, though the rate of population growth has been faster in Bowdoinham. The dispersion of Bowdoinham's workforce into surrounding towns and cities is reflected in the prevalence of high school and college graduates, both only slightly above the county average.

TABLE P-1
COMPARATIVE DEMOGRAPHIC PROFILE

Factor	Bowdoinham	Sagadahoc County
Total Residents (April, 1980)	1,800	28,795
Total Residents (April, 1990)	2,192	33,535
Total Residents (July, 1997 Est.)	2509	35,508
Estimated Annual Growth Rate 1990-1996	2.1%	0.95%
Projected Population in 2008	3,173	39,788
Percent 15 Years of Age or Less (1990)	24%	23%
Percent Over 65 Years of Age (1990)	10%	11%
Average Age (1990)	34 Years	33 Years
Percent Female (1990)	50.5%	50.6%
Percent White (1990)	98.6%	97.8%
High School Graduates (1990)	85%	81%
College Graduates (1990)	31%	28%

The estimated annual growth rate of Bowdoinham is 2.1% compared to Sagadahoc County's .95%. There were 85% high school graduates vs 81% in Sagadahoc County, and 31% college graduates vs 28 % in Sagadahoc County.

Age Structure of Bowdoinham's Population

Figure 1 illustrates Bowdoinham's 1995 age distribution. Like many rural towns in Maine, Bowdoinham has relatively smaller numbers of persons between ages 20 to 30. The balance of males and females is even up to ages 70+ when women show greater longevity. The baby boom is visible, with large numbers of persons between ages 30 and 50. The age distribution of Sagadahoc County is strikingly similar to that of Bowdoinham.

Households, Income and Income distribution

Household characteristics in Bowdoinham are very similar to those of the county. Bowdoinham's Household size and median income were nearly identical with the County's in 1990. The percent of population living below the poverty line in 1989 is very similar to Sagadahoc County, suggesting that Bowdoinham has maintained fair access to low and moderate income housing.

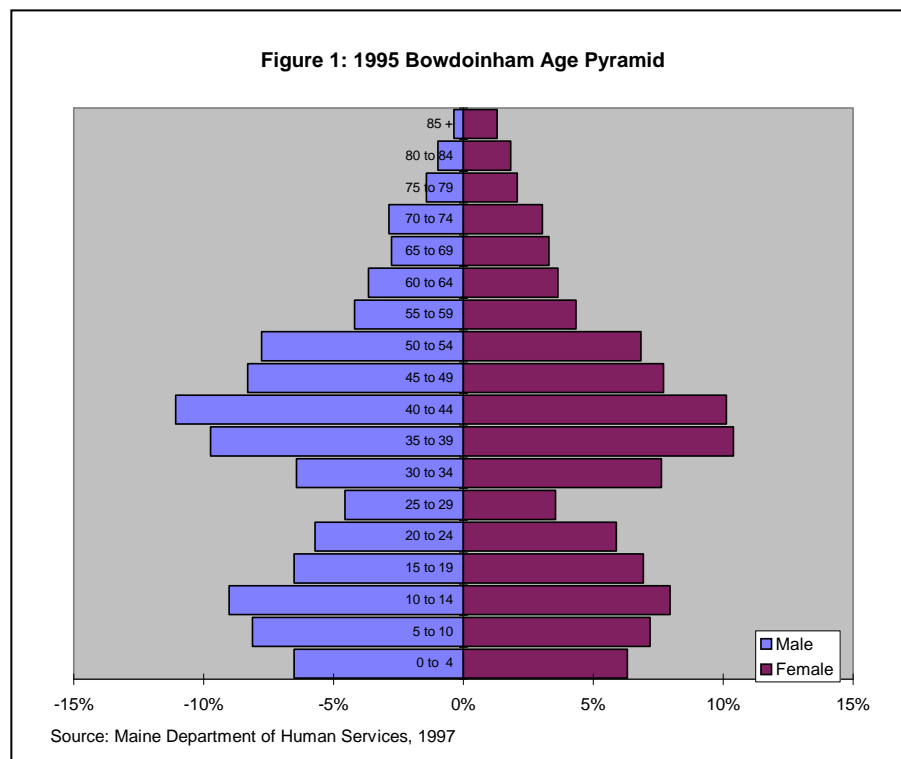


TABLE P-2
HOUSEHOLD PROFILE

<u>Household</u>	<u>Bowdoinham</u>	<u>Sagadahoc County</u>
Households	817	12,581
Persons per Household	2.7	2.7
Median Household Income (1990)	\$31,776	\$31,948
Persons Below the Poverty Line (1989)	6.8%	7.1%
Source; US Census 1990		

Projected Planning Population

According to the Department of Human Services, the population growth in Sagadahoc County is expected to continue at less than 1% per year. Some recent studies find that population growth has accelerated in the second half of the 1990's with Sagadahoc County leading the State. If Bowdoinham's population grows at 2% annually, then the population will reach 3,173 by the year 2008. If Bowdoinham's population maintains two percent annual growth, it can be expected to double in size every 35 years, while one-percent growth leads to doubling every 70 years. There are paradoxical trends: people have smaller families, want to move in the country and have larger houses. The impacts of population growth and lifestyle changes are discussed in the chapters on housing, the economy and future land use.

ECONOMY

Profile

The economy of Bowdoinham depends on three important factors, residents, local economic activities, and connections in the larger region. The Bowdoinham economy will be summarized in two major sections, human resources, and local businesses. Bowdoinham's economy will be compared to Sagadahoc County and neighboring towns.

Educational Attainment

The educational level of Bowdoinham is slightly higher than Sagadahoc County. The generally high level of association between education and income point to Bowdoinham's potential economic advantage.

TABLE E-I

EDUCATIONAL ATTAINMENT

Persons 25 years or older

	Bowdoinham	Sagadahoc
High School Graduation and Higher	85%	81%
4 Years College and Higher	27%	22%

Source: U.S. Census, 1990

Commuter Patterns

The labor force living in Bowdoinham is primarily employed in surrounding towns and cities. Bowdoinham's location makes it accessible to four major labor markets, Portland, the Mid-Coast, Androscoggin Valley and Kennebec Valley. In 1980 the highest percentage, 26.6%, worked in Brunswick, 19% in Bath, and 15% in Bowdoinham. Comparable information is not available from the 1990 census.

In 1990, the average commute time for Bowdoinham residents in the workforce was 28 minutes. Fifty-one percent of workers commuted less than thirty minutes, adequate to reach locations in Bowdoinham, Bath, Brunswick, Richmond, Topsham, and other

smaller communities. Thirty-eight percent commuted between 30 and 60 minutes, enough time to reach Portland, Lewiston, and Augusta.

Including those in the military, the total labor force is 1134. Out of total labor force 1,096 commuted more than 5 minutes. 62 worked at home and 163 car-pooled.

Employment and Occupation

Many of Bowdoinham's residents are employed at Bath Iron Works. According to the Portland Press Herald, April 13, 1992, about 220 people, or one-tenth of the population of Bowdoinham,

TABLE E-2
EMPLOYMENT

Industry	1980 Number	%	1990 Number	%	% Change
Natural Resource Based	29	4	9	1	-3
Construction	59	8	93	9	1
Manufacturing*	308	41	319	31	-10
Transport. Utilities	22	3	54	5	2
Wholesale Trade	14	2	26	3	1
Retail Trade	96	13	208	20	7
Fin. Ins. Real Estate	18	2	43	4	2
Business/Repair Services	23	3	37	4	1
Personal Services	24	2	na	na	-2
Entertainment	12	2	9	1	-1
Health Services	37	5	84	8	3
Education	83	11	60	6	-5
Other Professionals	23	3	50	5	2
Public Administrators	28	4	29	3	-1

Source: US Census 1980, 1990

* Shipbuilding

worked at BIW. Table 2 shows a high percent of people employed in manufacturing, many at Bath Iron Works. Table 2 also shows a significant decline in the percent employed in manufacturing, from 41% in 1980 to 31% in 1990. The trend

appears to follow a national trend away from agriculture and manufacturing and towards employment in the service economy.

While manufacturing has not grown in the region, employment overall has been robust in the recent years. Unemployment for Sagadahoc County overall in August 1998 was a remarkable 2.2%, well below the state and national averages.

Income

Table E- 3 compares incomes in the County and Towns as well as a comparison of per capita income in 1979 and 1989. Bowdoinham is similar to Sagadahoc County.

The Median Household Income in Bowdoinham is \$31,776, almost identical to the County. The Median Family Income in Bowdoinham is \$37,391, among the highest in the County, almost the same as Topsham.

The per capita comparison between 1979 and 1989 is not adjusted for inflation. Again Bowdoinham's per capita income in 1989 was almost

TABLE E-3				
INCOME IN 1989				
Region	Median Household*	Median Family*	Per Capita 1990	Per Capita 1980
Maine	\$27,854	\$32,422	\$12,957	
Sagadahoc County	31,948	35,851	13,668	\$5,924
Bath	29,892	34,126	13,984	6,100
Bowdoin	32,946	35,658	11,822	4,925
Bowdoinham	31,776	37,391	13,698	5,627
Richmond	27,639	33,583	10,844	5,005
Topsham	34,287	37,464	13,411	5,853

Source: US Census 1990

* The difference between Household and Family is that Household may include unrelated persons. Family is a subset of Household.

identical to the County, \$13,698, and Bowdoinham had among the highest per capita income on this table. Bath is only \$300 more.

Poverty

Table 4 compares poverty status by age group and family for state, county, and neighboring towns. The Census Bureau considers a number of factors in determining poverty. The most notable figure is the percentage of people over 65 falling in the poverty status. At 15.2%, Bowdoinham's percentage

of persons over 65 who are living in poverty is the highest in the County, and is higher than any other age group in Bowdoinham. This pattern may in part be related to new, low-income elderly housing built in 1989. Over half of the families in poverty in Bowdoinham are female -headed with no husband present.

TABLE E-4 POVERTY STATUS					
Area	Per Capita Income	Median Househol d Income	All Ages Families	Per Cent in Poverty Under 18	65& Over
MAINE	\$12,957	\$27,854	10.8 %	13.2 %	14.0%
SAGADAHOC	\$13,668	\$31,948	7.2%	9.0%	8.5%
BOWDOIN	\$11,822	\$32,946	5.4%	6.7%	11.6%
BOWDOINHAM	\$13,698	\$31,776	6.8%	6.5%	15.2%

Local Resources

Local Employers

Assessment records indicate that there are at least 61 businesses in Town. There is a concentration of them in the village, including grocery, restaurant, automotive service, manufacture and professional services. The larger employers in Bowdoinham are located close to the center, and include the Country Store, Town Offices, Community School, and FHC Corporation.

Outside the village, there are many home based businesses located along roads connecting Bowdoinham with Richmond, Topsham and Bowdoin. Map 1 illustrates the diversity of businesses and business locations. Agriculture-based businesses include production of dairy products, meat and poultry, fruit and vegetables, and ornamental and landscaping plants.

Bowdoinham's newest manufacturing business is FHC,Inc located at Cathance Landing in the old Shoe Factory, then Duck Decoy shop. FHC Inc employs 32, in production of microelectrodes used for neuroscience research and brain surgery. Other manufacturing businesses include soap, food processing, spun wool, furniture, log homes and other construction,

recycled materials and auto parts, foundations, printing and publishing and dried ornamental arrangements.

The largest sector for home based and small businesses in Bowdoinham is service. Dispersed throughout Bowdoinham are auto and small engine services, salvage facilities, business services, surveying, day care, transportation, laundry (diaper), retail sales, legal and personal services. Not mentioned here are many more home businesses that do not post signs or other advertisements. Products currently exported from Bowdoinham are as diverse as medical equipment, ground coffee, soap, and bait for lobsters.

Vacant Structures

At this time (July ,2000) the only vacant building on Main Street is the *Post Office* building which was vacated by the US Postal Service in 1998, having moved to their new facility on Route 125 near Interstate 95.

Retail Sales

TABLE 5 POPULATION NEEDED TO SUPPORT	
Retail Business	Population to Sustain
Restaurant	466
Lodging	530
Grocery	627
Sporting Goods	783
Florist and Nursery	1056`
Lumber	1208
Barber and Beauty Aids	1239
Printing and Advertising	1435`
Service Station	1570
Furniture Store	1602
Auto Tires and Parts	1796
Book Store	1796
Gift Stores	800
Source; Maine Bureau of Taxation	

The population served is obviously of a region- The above table is a rough indication of how many people it takes to support different businesses. The drawing region probably includes Topsham, Bowdoin, and Richmond.

The list just offers ideas for entrepreneurs and economic developers. Since 1992, a Flower shop has opened. It is too soon to know how well it will do.

Location Quotients indicates what type of retail business could be supported in the Town of Bowdoinham. A location quotient of 1 would suggest that a town has retail facilities roughly adequate to serve local consumption. A location quotient larger than 1 suggests the town sells retail goods to other

communities and a location quotient less than one suggests that people are going out of town to meet their needs. Historically Bowdoinham's location quotient has been approximately .1 to .2, indicating that residents of Bowdoinham are purchasing, on average, no more than 10% to 20% of their retail goods from local businesses, and probably a good deal less.

Analysis

Bowdoinham residents are interested in economic development to increase the tax base and employment, but are concerned about impacts on land use and costs of municipal services. Development should be a net gain to the Town, paying more in taxes than it costs to provide services.

Economic development also affects "quality of life" objectives. A motivation expressed by some people in Bowdoinham is to enhance the sense of community. This can be achieved by revitalizing what is already in Town and making existing businesses more viable. Assisting and supporting existing facilities such as the Country Store, the Community School, the Town Hall and local churches and organizations are means of achieving these goals. Consumer convenience is enhanced when retail and services are provided locally. Retail stores in Bowdoinham reduce the need to drive to more distant locations, which saves time and energy and helps to keep money in town.

Adding to the Tax Base

The impact value of adding to the tax base is not always a net gain for the Town budget. There is no question that commercial buildings increase the tax base, but the assumption that this will reduce the tax burden on the rest of the Town does not always prove true. In some instances new businesses require costly Town services. The State may also reduce school funding to the Town in proportion to the increase in valuation from new properties, further reducing the impact of higher tax revenues from commercial properties.

According to Larry Record of the State's Bureau of Taxation, the Town would in fact gain tax base and net additional tax income for two years after property is placed in service. At that time, however, the State would factor the increase in value into its school funding formula. As a town's comparative valuation increases, the State's funding level decreases, reducing the increase in revenues in the third year.

Normally commercial and industrial property requires no educational services, the service that consumes the largest percent of the tax revenue. Certain types of businesses use large tracts of land without requiring excessive solid waste disposal, fire or police protection. Other commercial uses demand much higher levels of services, some of which are not currently available in Bowdoinham. All of these impacts need to be taken into

consideration in order to assess the net impact of development on Bowdoinham's revenues and expenditures.

Opportunities-Assets

Accessibility

Bowdoinham's location within easy access to the interchange on 1-95 not only makes it possible to commute to Portland and Augusta but also is an opportunity for businesses that rely on the highways, such as wholesalers and distributors.

The Village

While only a faint echo of the commerce in the 19th Century, the Village is still an identifiable focal point for local economic and social activity. It is a crossroads for local traffic, making it particularly apt for serving local commercial retail and service needs. Local establishments currently provide groceries, hardware, restaurant, automotive, banking, legal, religious, printing and other goods and services. Many of these establishments meet the needs of residents as well as tourists using the waterfront, airport, and recreation areas.

Constraints

The Lack of Public Sewer System

There are no public sewers in Bowdoinham. Clay soils and old networks of subsurface disposal have made it difficult to expand or even use existing buildings for commerce. Wright-Pierce Engineering conducted a study in 1982 and found that a public sewer system was not a cost-effective option. They recommended instead that the subsurface disposal be upgraded and brought up to code. Since then, many people have spent considerable sums upgrading their systems, making them less likely to support a public sewerage in the future.

This is a difficult issue and requires in-depth examination. Perhaps public sewers would be supported if it could be demonstrated that a limited system, paid for by the users, would provide the necessary infrastructure for attracting the type of commerce that results in a net tax gain.

Water

The lack of adequate water pressure and potential shortage of supply limit the Town's ability to supply commercial or industrial quantities of water. See the chapter on Water for a detailed discussion.

Local Regulations

Site Plan Review and Land Use Ordinances need to be updated recognizing the needs of local businesses as well as protecting quality of life. Site plan ordinances are unclear about size threshold and the kinds of reviews necessary to permit development.

Concern about Impacts of Development

Bowdoinham residents have voiced their concern about the impacts of development on the quality of life, particularly in locations close to their homes.

Opportunities and Options

Community Development Block Grant Programs

There are many sources of government funds: the most prominent and with the broadest umbrella is the CDBG program administered by the State Department of Economic and Community Development. The grant programs are offered to municipalities yearly.

Funds are available for a variety of projects from building rehabilitation to preservation activities and even acquisition of land. The application period is currently shifting from October to May. It is highly competitive and there are income eligibility requirements. The application has to be carefully planned and the community has to be involved in and supportive of the project. It is not something that can be prepared by a single individual in a couple of weeks.

Streamline the Permit Process

Streamlining the permit process could make both the ordinances and the Planning Board more "developer friendly". It can, and indeed, it must, be done without sacrificing the protection that the Town desires for its unique natural resources. Bowdoinham, according to the State Planning Office Census Bureau, is the fastest growing community in Sagadahoc County.

It would be wise for the Town to consider someone to monitor the growth of the Town and plan for the future. If we would like to maintain the "small town atmosphere" as well as keep up with progress, we must consider these options. The permit process has been simplified so those applicants can be easily guided through the process with minimal difficulties. Planning Board members and the Code Enforcement Officer already work together to ensure that permitting and review are conducted with a high standard of efficiency and professionalism.

Standards can be clarified and certain uses can be allowed "by right" in pre-designated districts (which means zoning). The criteria for review should be designed around anticipating the potential impact. Minor expansions with little potential for effect on services, traffic, or the natural environment can be reviewed and approved by the Building Inspector or CEO.

The ordinances must be written clearly so that applicants can understand and abide by the ordinance standards. Application forms based on the ordinances should be easily applied to a re-developed checklist. In short,

the process should be almost self-administering, for both the developer and the Planning Board. Planning Board reviews with the assistance from the Code Enforcement Officer(or when needed, a consultant,) should be reserved for the large-scale developments with potential impact on the natural resources and services.

Sewers

The Town may want to take another look at applying for CDBG funds to develop a limited sewer system to serve economic expansion and Village revitalization objectives.

The Village

Interest in revitalizing the Village seems to be high. Applying for CDBG redevelopment grants, even for the specific objective of supporting the structural improvements to the Country Store seems a feasible opportunity. Special Village zoning to encourage revitalization and attract business, which enhances the sense of Village community, is among the options available.

Survey Responses Related To Economic Development and The Village

Location of Commerce And Industry

(Only those responses indicating a 60% or more agreement are reported here)

1. 70% agreed that Home occupations should be allowed everywhere in Town. 13% said No and 17% didn't know or were neutral. (Q 10 d.)
2. 68% did not agree that new business or industry should be allowed anywhere. 19% agreed and 11% were neutral. (Q 10 a.)
3. 62% agreed that the Town should have a Rural Zone where commercial and industrial uses, other than home occupations, should be prohibited. (Q 11a.)

The Village

1. In decreasing percentages responders thought the following should be in the Village:

Service Stores and Professional offices	75%
Renovated/restored historical houses	73%
Housing for the Elderly	69%
Service Organization and Churches	66%

Public Works Garage and fire station 62% (Q 14)

The Regulations

82% agreed that the Town should set standards for all commercial development and require enforcement of the standards. (Q 10 b)

Miscellaneous

1. 80% agreed that the Town should encourage the reuse of vacant buildings. (Q 10)
2. 66% agreed that economic development of the existing Village area would be good for the Town as a whole; 9.8% disagreed and 26.8% were neutral. (Q 16 a)

Goals and Strategies

The over-arching, primary goal is to:

Promote Economic Development That Provides Benefits To the Town And Stability In The Local Economy For Employment And Income Opportunities In An Environment Of Adaptability

We Find That

About one-tenth of the population-(220 people in 1992,) work at BIW. This makes us vulnerable to cutbacks in shipbuilding and defense.

Retail stores in Town reduce the need to drive, saving time and energy while keeping money in town.

GOAL I

Provide Local Employment Opportunities

Strategies for Implementing Goal I

1. Attract/keep/support retail and service businesses that are compatible with local rural community and are within the capacity of public services and have minimal impact on the natural resources of the area.
2. Showcase the many cottage industries in the Town. There are now approximately 61 such businesses in Town.
3. Support, protect, and promote agricultural-based businesses.
4. Encourage new business formation from within the community.
5. Review ordinances to be sure they are not constraining to business and industrial expansion improvement.
6. Allow the Codes Enforcement Officer to assist the Planning Board in processing permits and persons interested in expanding businesses.

We Find That

Citizens in Bowdoinham wish to enhance the sense of community. Viable businesses enhance the community.

The steady patronage of business in spite of burgeoning competition in nearby Topsham indicates there is need for local establishments like The Country Store, Gas Station and Town Landing restaurant. These businesses double as community meeting places—There is an old bench to sit and visit at the Country Store, and regulars have their own cups hanging by the Coffee Pot at the Restaurant. The day to day personal contacts at these places offer a sense of belonging and community identity.

GOAL II

Encourage Development That Enhances A Sense Of Community

Strategies for Implementing Goal II

1. Encourage revitalization of the Village Center by both supporting existing businesses and services and attracting new businesses.
2. Promote the upgrade and use of the existing buildings in the Village by
 - a. Surveying existing businesses to find out what their needs are and under what conditions they would move into empty buildings
 - b. Surveying the needs of local consumers, to find out what would attract them and keep resources in the community;
 - c. Implementing a plan to make the improvements, which the two surveys indicate are needed, including grant applications.
3. Maintain and expand the level of private and public services necessary for a healthy and vital community (retail, health, town hall).

We Find That

Bowdoinham's easy access to I-95, and proximity to Portland and Augusta makes it an ideal location for manufacturing or shipping businesses. These assets need to be promoted.

The Site Plan Review and Land Use Ordinances need to be updated, recognizing the needs of local businesses. Site Plan ordinance is unclear about size threshold and the kinds of reviews necessary to permit development.

Funds are available for a variety of projects. They need to be aggressively sought. An actively involved community will gain points in competitive applications.

GOAL III

Encourage the Establishment Of Local Economic Committee To:

1. Review existing ordinances.
2. Develop a sign ordinance.
3. Apply for CDBG grant for building rehabilitation, preservation activities or land acquisition.
4. Explore attracting businesses of the size the community can support.

5. Prepare a directory of businesses in the area.
6. Encourage other activities supporting businesses in the community that it deems appropriate.

AGRICULTURE

Inventory

There are two major types of soil in Bowdoinham; the Hadley silt loam bordering the Bay requiring the water from the Bay for irrigation, and the heavy Buxton silt loam soils that are visible as the gently rolling fields in the rest of the Town.

The prime farmland on the Bay is well suited to the production of high value, intensely managed vegetable crops. They include carrots, parsnips, potatoes, radishes, cucumbers, peas, tomatoes, etc. plus strawberries, herbs and flowers.

It is a distinguishing feature that most of this land is not owned by the farmers but is rented by them. Perhaps because renting does not require the financial resources of purchasing, younger farmers work the land around the Bay as well as older ones. One drawback of land rental is that some farmers move on because land ownership is not available. The ownership itself tends to be long term, in some cases for generations, and thus far there has been only a modest amount of land development.

The prime farmland away from the Bay is suitable for orchards, short season vegetables and livestock production. The remains of many once successful apple orchards are still visible on the sloping well-drained hills. With the closing of the last canning factories, the corn, squash, turnip, beans and cabbage are no longer grown on these heavy soils. Currently and historically most of the land under active cultivation is used for livestock production either for grazing or for hay, silage, or corn crops.

The farmers away from the Bay tend to be older. As they retire, the land tends to be developed rather than purchased by a young farmer. An exception has been the purchase of the Alice Wheeler farm. Because the State had already purchased the development rights for \$330,000, the younger new owners were able to purchase the farm for \$200,000. The sale as a farm would not have taken place otherwise, because the farm could not generate enough income to support a family and pay the debt on the farm if it had been sold with the development rights included.

Existing Laws

Registration of Farmland Act (7 MRSA 51 to 59)

The procedure which allowed farmers to require a new development to be set back 100 feet from active farm land was in place from 1987 through 1990. Registration is no longer possible. However, the setback requirement still applies to land registered during that time.

The statewide program was discontinued because of complaints from a few

adjacent landowners and for lack of aggressive support from the State. It is the type of program more appropriately administered at the local level. A copy of the law is on file as an attachment to this Plan.

The Right to Farm Act - Section 2805 of the Nuisance Laws in Title 17 (Farm or Farms Operations Not a Nuisance)

This Act provides that farming activities in accordance with "Best Management Practices," as determined by the Department of Agriculture, shall not be considered a nuisance in a court of law.

This Act was recently amended to require that a municipality submit any ordinance, which may restrict or prohibit agriculture conducted according to the Best Management Practices to the Department of Agriculture for review and approval.

Upon complaint, the Department of Agriculture will investigate practices to determine if they are consistent with the Best Management Practices. If BMPs are not followed, the Department of Agriculture will send a notice to the State and Federal agencies whose law has been violated or refer the matter to the Attorney General.

The formal purpose of this law is to protect farmers from losing nuisance suits in court. The real effect is that it provides a mechanism for somebody to file a complaint and the Department of Agriculture to work with the farmer to upgrade his practices to an acceptable level. The requirement to submit municipal acts for review was a legislative compromise with the agricultural community who had requested that the State pass a law prohibiting any locality from passing such laws.

Farm and Open Space Tax Law (36 MRSA 1101)

This Act was revised in 1996 to lower the eligibility requirements and to restructure the penalties of the Farm and Open Space Tax Law.

A landowner who has five or more contiguous acres on which farming, agriculture or horticultural activities have produced a gross income of at least \$2,000 (including food consumed), may apply to the Town to have his/her land classified as farmland. Once so classified, it is taxed as farmland instead of at market value. The State issues guidelines for values, but in this part of the state it is sure to be less than the market value.

The penalty for withdrawing from the program is most severe initially and decreases to the constitutional minimum after 10 years. The penalty is necessary because otherwise the Town would be losing revenues while the landowner may be speculating. If withdrawn in the first five years, the penalty is 20% of the assessed fair market value. If withdrawn in the next five years, the farmer pays the difference of taxes he would have paid if not assessed as farmland, with interest. If withdrawn after ten years in the program, the withdrawal penalty is the difference in taxes in the most recent five years plus

interest. There is more information on this program on file at the Town Office. A farmer who is interested in entering the program should first discuss it with the Assessor.

According to the latest published report of the Property Tax Division, in 1998 Bowdoinham had 2,164 acres, or 38 parcels valued at \$532,900 farmland enrolled in the program. That is the most land in any municipality in Sagadahoc County and topped by only 10 communities who have more land in the program in the entire state.

Shoreland Zoning Ordinance (38 MRSA 438-A (1))

There are many negative rumors about the controls over farmers in the Shoreland Zoning Act. The guideline ordinance issued by the State as a minimum that local ordinances must comply with, allows farming in all districts of the Shoreland Zone (for a complete description of the Shoreland Zoning Act, please see the Natural Resources Section). The guideline recommends that a Planning Board require a permit to farm in the Resource Protection District. In all other districts, farming can be practiced without any permit.

In the Land Use Standard Section, there are some restrictions on how agriculture is to be done:

1. Spreading of manure shall be in accordance with State Guidelines now being revised.
2. No new manure storage within 100 feet of great ponds or 75 feet of rivers, unless pre-existing, in which case it must be so contained that there is no discharge from it to the water.
3. If tilling more than an acre in the Shoreland Zone, or spreading manure, it should be done in accordance with the Soil and Water Conservation Plan.
4. No new tilling of soil within 100 feet of lakes, 75 feet of rivers and 25 feet of tributaries. Operations in existence prior to the adoption of the local ordinance are exempt.
5. Similarly, after the adoption of the ordinance, new established livestock grazing areas will not be allowed within 100 feet of lakes, 75 feet of rivers and 25 feet of tributaries. Old pastures are "grandfathered", that is, as long as there is not outrageous pollution, they will be left alone.

Analysis

What can the town do to aid farms?

There are at least four ways that the Town may encourage agriculture.

1. Encourage land to be placed in the State Farmland Program to reduce the property tax burden to the farmer. An open field on the Bay can have over \$2,000 in taxes levied on it, which will either be passed on to the farmer as increased rental or be a motivation for the owner to develop the land.
2. The Town could assist in generation transfers of farms a number of different ways, all of which reduce the purchase price or debt payment for an entering farmer. Selling or donating development rights can make the transfer possible. The Federal government has an interest in saving Merrymeeting Bay. Toward this end, money may be available to purchase the development rights of land surrounding the Bay, but only parcels requested by both the landowner and the townspeople will be considered. The Town must demonstrate that it considers farmland valuable in order to qualify for the Federal or State funds. The Town may also encourage land owners to work with area land trusts that are in a position to accept, or possibly purchase, development rights through conservation easements.

A commitment by the Town to farming enterprises will aid its future success. The new farmer deciding which town to move into will also be influenced by the Town's view of agriculture, as will the bank that must decide whether to finance the project.

3. The Town could take steps to reduce the conflict between farms and people. It could discourage population growth next to active farmland. Farming is mechanized, machines make noise and farmers work long hours. Complaints have been lodged by neighbors about Sunday tractor noise, the smell of silage or manure. There is no question that the more people there are in the area, the more numerous the complaints will be.

As profit margins narrow, the use of sludge is seen as a way to avoid the cost of spending \$100 per acre per year for lime to counteract the effect of acid rain and chemical fertilizers. With the demise of the poultry industry, it becomes the only off farm source of organic slow release nitrogen and organic matter. This product also has an odor and so is a source of complaints.

As development of growth areas is considered, it would seem sensible to place that development away from actively farmed land to avoid the conflict associated with noise and odor. In addition, it would make sense to establish a minimum buffer between new dwellings, wells and actively farmed land. This would prevent land from being taken out of agriculture for the buffer.

4. The fourth way that the Town could help farming by clarifying the current Site Plan Review Ordinance. At its adoption, it was specifically explained at the town meeting that the law was not meant to apply to agriculture but only to commercial and industrial operations. The Planning Board has consistently considered this to be the case. Code Enforcement Officers have not always agreed because they consider agriculture to be either a commercial or industrial activity. Under this interpretation, building permits cannot be given without Site Plan Review.

The Ordinance contains no minimum dollar threshold stating when it is triggered. Even items that do not meet the \$2000 threshold for a building permit could be said to trigger Site Plan Review. This could apply to a \$100 farm stand for selling pumpkins, or to a calf hutch. As Planning Board membership is constantly changing, it would be helpful to have the Ordinance clarified to show the actual intent of the town at the time of enactment.

Benefits of Farming To The Town

In addition to benefiting people who choose to farm in Bowdoinham, farmland has the following beneficial impacts on the community:

Aesthetic

Open rolling fields define the character of Bowdoinham and afford a pleasant visual vista for people driving along the roads.

Recreation opportunities

Farm fields offer space for cross country skiing, snow-mobiling, horseback riding and all terrain vehicles, with the permission of the landowner or farmer.

Avoided costs

It is important to bear in mind that there are no real costs to the town for farmland. There are no education, busing, road maintenance fire and police costs per acre as there are for residential development.

Bowdoinham had an opportunity to examine this question when there was a proposal to develop 200 acres of the former Alice Wheeler farm in 1988.

We found then that the existence of undeveloped land was a net plus source of town income. When the state requested the town to express its position on the former Alice Wheeler farm being developed or not; the Selectmen were able to look at the numbers involving the two alternatives.

Triangle properties proposed to build 150,3 and 4 bedroom houses on the 200 acres of land in Bowdoinham. These houses were to sell for \$150,000 each. Bowdoinham used 100% valuation and the mil rate at the time was 16.3%

The following assumptions were made:

- 1) The Planning Board would stipulate that the town would not be responsible for summer or winter maintenance of the roads in the subdivision
- 2) Richmond Fire department would be the primary responder so that a Bowdoinham substation would not be necessary
- 3) Empty nesters would not be the buyers of 3&4 bedroom houses. It was likely that each house would average 2 school age children
- 4) The Town's tax obligation for schooling each student would remain about \$5000 per pupil per year

- 5) That the 300 extra children could be absorbed by the school system without any new school construction or purchase of new school bus.

The number computed out as follows. Each dwelling would contribute \$2445 per year to the tax rolls. (150,000x 16.3 mil rate). Each dwelling would use \$10,000 of services for educating 2 children.

Net income from taxes for the subdivision:	\$366,756
Net expenses from education for the subdivision	\$1,500,000
Net cost to the town	\$1,133,250

Based upon the town valuation at the time it would have been necessary to raise the mil rate on all the property in town by 3.6 to 19.9 to cover the added costs of the subdivision. (This disregards for the moment, any other services, or the strong likelihood that 300 people would show up at Town meeting demanding the Town take over the roads)

Because the state purchased the development rights to that land the town would only receive \$978 in property taxes (200 acres @\$300 per acre 16.3 mil rate for that property). Yet, this income has no off-site costs. It requires no town services.

The approximately 20,000 acres of undeveloped land still left in town provide 12 million dollars of taxable valuation which require no town services and hence this undeveloped land subsidizes the developed area making the tax burden much more affordable for everyone else. As this undeveloped land is converted to houses, tax rates will rise and the subsidy disappears to be replaced by property that costs more than it gives in taxes.

An additional cost saving is that because of the availability of hay land the Town does not have to purchase, develop and manage a state mandated site for disposal of septic waste

Locally Grown Products

Although right now there is no longer a farm stand in Town, (the only direct marketing is the pick your own strawberry operation), as long as there is farm land available the opportunity for a farm stand exists (or the Country Store could be selling more locally grown products)

SURVEY RESULTS

The only question on which there was more than 60% agreement was:

Opinion of Conservation Easements 65% thought conservation easements or purchase of development rights on farmland should be supported 24% did not 11% were neutral

GOALS AND STRATEGIES

We find that

Farming and Forestry make Bowdoinham the rural community we value and wish to preserve. Land used for farming and forestry contribute more to the tax base than they cost in services.

GOAL 1:

Maintain Forest And Farmland For Its Current And Potential Use For Farming And Forestry.

Implementation Strategies:

1. Encourage participation in tree growth and the Farm and Open Space Tax Law. The Town Manager and Clerk should be familiar with the provisions of the law, distribute information to eligible farmers and, together with the assessor, be available to discuss the implications for the landowner.
2. Encourage participation in state, federal or private land trust purchase of development rights or conservation easement programs.
3. Reaffirm and clarify the applicability and exemptions of the local site review ordinance.

We Find That:

There are potential conflicts with uses of land adjacent to farm land. We believe that a buffer between farming and residential development will increase tolerance of agriculture.

GOAL 2:

Minimize Conflicts Between Farmers And Adjacent Landowners

Implementation Strategies:

1. Develop an ordinance which establishes an adequate setback from farm fields or pastures for houses and new wells. (The definition of what constitutes a farm can be the same as that for the Farmland Open Space Tax Law.)
2. Encourage farmers to follow Best Management Practices

We Find That :

Some neighbors to farmers may have difficulty tolerating or understanding agricultural practices. Some towns have passed ordinances which have been unjustifiably constraining to farmers.

GOAL 3

All Farmers Should Be Encouraged To Farm According To Best Management Practices As Defined By The State Department Of Agriculture.

Implementation Strategies:

1. Use the Right to Farm State Law by requesting the Department of Agriculture to interpret/advise on acceptable practices and mediate difficulties with neighbors.
2. Ask the Department of Agriculture to evaluate ordinances that the Town may pass for potential impact on agriculture.

FOREST LAND

Historical Perspective

Historically, the forests have played an integral role in the economy of Bowdoinham. The combination of trees, damnable streams and deep tide water harbors allowed the community to support seven sawmills and a very successful wooden ship building industry in the 19th century. This was the period of the town's population rise and fall, peaking at 2,382 in 1850.

Throughout the 19th century, wood was the primary fuel. A very large volume of firewood must have been consumed. Every dwelling and business had at least one stove or fireplace all using 5 cords a year for 100 years. It seems that 100,000 total cords may be conservative.

The old saying of Loggers, "Cutting the best and leaving the rest" holds true from the beginning for much of the forest harvesting that has been done in Bowdoinham. In the early days the hardwoods had no market value but were widely used for firewood. The softwoods, particularly pine, were in demand, but only for the larger diameter trees. In the 19th century, portable sawmills were common. They were moved from wood lot to wood lot, with the mill owner wanting all volumes possible to lower his moving costs and the landowner wanting all the money possible (pine stumpage was \$4 MBF). Therefore, many lots were stripped.

In 1996, Bayview Cemetery Association received notice that the Norway Spruce Tree that the Association had nominated for entry in to the Maine Register of Big Trees was given a score of 209. The highest score of a known Maine Norway Spruce Tree is 233. The Maine Forest Service gave thanks for submitting the tree and it was close enough to be placed on standby.

In 1995, a large White Pine Tree was cut in town and a horizontal slice, called a wood cookie, was cut off from the stump. It has been under cover, is dried, has not cracked, and looks to be about 123 years old. It should be finished off and smoothed up, making age from growth rings more readable. It would make a good place to record some of the town's historic dates that the pine trees lived through.

...And Today

The presence of forests raises a number of vital issues to Bowdoinham residents.

Residents of Bowdoinham appreciate the wooded backdrop provided by the forests in the Town. Over half of the 50 miles of snowmobile trails that go through the town travel through woodlands, and many of these are used by cross-country skiers as well. In addition, the woods provide habitat for many species of wildlife. Deer hunters line the roads in November.

Because many people are attracted to the rural nature of Bowdoinham, much of the Town's most recent residential building has taken place on forested parcels. This has meant that more and more people are now located closer to the forest resource. While the impact on volume of wood is affected to a small extent by this development, there are powerful impacts on the resource. New housing fragments the forest, which means there are fewer and smaller contiguous forest parcels. This makes habitat less suitable for wildlife and makes logging operations more difficult to conduct.

Inventory

While the industries of the 19th Century are no longer in operation, the forest resource in Bowdoinham remains large. Of the Town's 22,176 acres, 13,000 acres (or nearly 60 percent) are in forest. As farms and pastures are abandoned, lots not converted to residential housing are returning to their natural cover - forests. Thus, the percentage of the acreage in forest is actually increasing.

Now, harvesting practices are generally improving. As a whole, an estimate of our existing forest types is 35% softwood, 50% mixed wood, and 15% hardwood. This is a good ratio. Mixed wood stands offer the best chance for periodic partial cuts, a must for profitable wood lot ownership.

Trees will grow on most of the land in Bowdoinham, but grow faster and healthier on the better soil sites. A wide range of soil types exists, often in small-scattered areas, with varying tree growth productivity ratings. Soil type maps of Bowdoinham are available from the US Natural Resource Conservation Service in Lewiston. It is an important factor in managing any woodlot. All wood lot owners should be aware of this service.

Harvested Wood

Bowdoinham is well located for marketing its forest products. With the 'state of the art' progress in the manufacture of paper and lumber, mills have become modernized, fewer, larger, and farther away. With this came an upgraded state highway system and I-95. Now we have three pulp and paper mills and two large(and several small) sawmills all within a normal trucking radius. Our forest products move to all these mills from time to time.

There is no record of annual cut in the Town because harvesting data collected by the Maine Forest Service is aggregated annually with all data from Sagadahoc County.

Harvested wood is used either for firewood sales or taken to pulp mills, sawmills or biomass plants in the region. Logging contractors both within and outside of Town conduct these harvesting operations. A number of wood lot owners cut firewood from their own land for their own use.

Managed Lands

Of the 13,000 acres in forestlands, about half are managed according to plans developed by professional foresters. Included in these are over 600 acres certified in the Maine Tree Farm Program, a nationwide forest industry sponsored program and several wood lots on which silvicultural practices (pruning, thinning and tree planting) are carried out under the auspices of the United States Agricultural and Stabilization Program.

Most of the managed forestland falls under some tax protection through the State's Tree Growth Tax Laws and Open Space Laws. These tax laws are designed so that landowners who use the natural resource value of their land pay a lower tax rate than landowners who opt to develop their land or keep development options open. The Tree Growth Tax Law is a productivity tax; the tax is assessed, based on the type of forest cover, in an effort to allow the owner to profitably keep the land in forest. Thus the rate of taxation does not exceed the amount that can be derived from annual growth.

3,945.8 forested acres fall under tree growth or open space protection. Of these 2,945.5 forested acres are in tree growth and 1,000.3 forested acres are in open space. Under both programs combined, there are 1,052.2 acres in softwood (27%), 1,828.3 acres in mixed wood (46%), and 1,065.3 acres in hardwood (27%). Owners who remove land from either program pay a high withdrawal penalty.

That forestland is under management does not always mean that good forestry is taking place. The town has examples of harvesting ranging from excellent to poor.

Woods-Related Industries

Bowdoinham supports very few wood-related industries. There are two Christmas tree plantations, a small custom sawmill, a portable trailer-mounted band saw mill, a complete biomass harvesting business, one or two skidder and several winch type operators. Numerous loggers from out of town work local wood lots, usually timed with market demand.

There are many 'at home' businesses in town, several that use small quantities of unusually high quality wood. One, Steven Bunn, in 1997 completed a contract for five 'top of the line' Windsor chairs that went to Tokyo, Japan, all made in his shop, all from local wood.

Forestland Ownership

Nearly all forestlands in the Town are privately owned. There are two parcels of state-owned land. Reed's Point is a 335-acre wildlife preserve at the end of the Wildes Point Road where over half the land is in forest. At the junction of Rt. 24 and the Pork Point Road is the Bachman property, which is owned and managed by the Maine State Department of Inland Fisheries and Wildlife. Forests dominate this 150-acre parcel.

Conservation easements are currently being negotiated for a few parcels in the town.

Existing Laws & Ordinances

In parts of the Town that fall in the Shoreland Zone, harvesting is conducted in accordance with regulations enacted by the State of Maine Shoreland Zoning Law.

Town land use ordinances also regulate harvesting in the portions of the Resource Protection District and in Limited Recreation/Residential District that do not fall within Shoreland Zone. Harvesting regulations are designed to protect against sediment and erosion. Harvesting on all other forestland is regulated by the State of Maine's Forest Practices Act.

The Town has the authority to examine forest management plans to determine if forestland owners are managing their land according to plans.

Goals And Strategies

We Find That:

The forests in Bowdoinham have historically provided and still today provide, at least the following multiple values to the Town:

- ◆ Economic value for wooden ship building, sawmills, furniture, pulp for paper mills and jobs for wood cutters;
- ◆ Recreational trails for hiking, horseback riding, snowmobiling
- ◆ Wildlife habitat for deer, birds and other wildlife
- ◆ Protection of water quality by filtering sediments and other potential contaminants
- ◆ Desired solace, “open” spaces and buffer in residential development.

Some activities or management practices may not always be in the best interest of protecting or maximizing all of the above values.

We further find that the public is not well informed on the values of the forests and how best to protect them.

GOALS

Assure That Management and Activities In The Forests Continue To Sustain Their Economic, Recreational, Water Quality And Wildlife Habitat Values.

Strategies to Implement the Goal

1. The Selectmen will designate a committee to review and evaluate the impact on and effectiveness of existing local ordinances on the "working forest."
2. The Town will request assistance from local persons with a knowledge of the Town's forest lands and the Natural Resource Conservation Service to
 - a. Identify and map parcels of forest lands of high economic value . and
 - b. Recommend appropriate tools to assure the continued productivity and maximal ecological value of the forests in Bowdoinham.
3. The Designated Committee shall report findings and recommendations to the Town which may consider adoption of ordinance changes and/or other committee recommendations The Committee shall also identify forest lands that warrant protection from development.
4. The Selectmen will designate a Town "Keeper of the Forest" to serve as a resource person to the Committee, maintaining a record that reflects forestry activities occurring in the town and the status of harvesting and woodlot improvements. The Keeper of the Forest shall prepare a summary on forest activities for the Annual Town Report.
5. The Town will request that the Bowdoinham Library develop and update a collection of books and articles on good forest management.

HISTORY AND ARCHEOLOGY

History

The Town of BOWDOINHAM was incorporated September 18, 1762, as the 14th Town in the District of Maine. Trappers, fishermen, surveyors, and timber cruisers peopled the area, at least seasonally, as early as 1630. Permanent settlers arrived in the 1730's, shortly after the end of the Maine Indian wars.

The first settlers lived on the fringes of Merrymeeting Bay and its tributary rivers. They were farmers and fishermen first, working to push the woods back. A 1795 map of "old" Bowdoinham offers a handwritten comment from its surveyor/editor: "there are yet no real roads in this town... passage is mostly by water".

Bowdoinham, in those early days before Maine's statehood, included all of present day Richmond (White's Landing) a part of Topsham (Cathance Neck) and a large part of present-day Bowdoin (West Bowdoinham). Since 1823, Bowdoinham's boundaries have remained essentially unchanged, stretching some eight miles along the western shore of Merrymeeting Bay and the Kennebec River, then inland due west nearly five miles.

Today's Bowdoinham Village, or Cathance Landing, was settled about 1800. A toll bridge spanned the Cathance by 1805, and the tidewater landing developed into a bustling center for trade in less than a decade. The landlocked, developing towns of Bowdoin, Litchfield, Webster, Wales, even Lisbon and Lewiston found " the Landing" to be quick and easy access to tidewater, and the sailing vessels that plied the Atlantic coast.

Bowdoinham became one of the earliest shipbuilding centers in a State that became known as a "Ship building State. " Vessels of wood were constructed at Bowdoinham a decade before the American Revolution, and during the next 125 years, more than 250 vessels of all class and tonnage were built in here.

The decades before the American Civil War brought the town unparalleled prosperity. Warehouses, chandlers, icehouses, mills, stores, and shipyards lined both shores of the Cathance. Boarding houses, two hotels, several taverns, private estates and more than two dozen shops, businesses and manufacturing operations shared frontage on the Town's steep Main Street with private homes, churches and civic clubs.

In its 1850 census, the Town's population peaked at 2,382.

But the decade following the civil war triggered an economic decline in Bowdoinham and other parts of the north and east. Many young men went to and were wounded or killed in the war, while many more followed the rivers and railroads south and west when the conflict was done. The Town's

only bank was robbed in 1867; more than \$73,000 was taken and never recovered.

Bowdoinham's smaller, wooden ships became obsolete, her yards too small to compete. The town which helped to foster the state's maritime industry had to stand helplessly aside, watching her seamen and master builders move to towns with wider rivers and the ability to build bigger ships.

By 1890, Bowdoinham had reverted to what it had been in its earliest days, a small, independent, agricultural-based community of self-sufficient family farms. Residents produced apples, hay, wheat and potatoes, some sheep, poultry and beef, or worked in small shops. They harvested fish and ice from the rivers, and wood from the forests. The Kendall Brothers came to town and their successful fertilizer, sheep and grain business became known across the state.

In 1902, a mid-December fire raged largely unchecked through Bowdoinham's downtown commercial center, destroying almost all of it. Dozens of shops, homes, and warehouses were leveled. Fire struck the downtown area again in 1904, taking out another section of the town's center. Most of Bowdoinham's commerce, and much of her historical village center, were lost in these misfortunes.

After the global depression of the 1930's, Bowdoinham's population sank to a modern low of 904 people.

At the end of World War II, Bowdoinham rode the success of its neighboring towns to make gains of its own. Today, her population has grown steadily back to 2,500 residents, and more. Bowdoinham has become a "bedroom town," her industry and fortunes tied to those of her neighbors. Her history, made even more remote by these recent changes, has become all the more precious, even more worthy of preservation.

Public Opinion

Interviews

The approximately 30 people who were interviewed in depth were asked to rate, on a scale of one to ten, the intensity of their interest in preserving the village area and historical buildings in the town.

The average score for preserving the village area was 8.0, and for protecting individual older buildings, 5.5. Scoring for Archaeology was 6.9. Many respondents elaborated on their rating, saying they did not want a special historical commission or district established as a means for preserving old buildings.

Surveys.

Responses to the survey indicate a strong interest in the history of our Town and a wish to preserve any remaining physical evidence.

71% Agreed that future land use planning should take into consideration the traditional historic uses of an area; 8% disagreed, and 4,5% were neutral.

73% Thought renovated/restored historic buildings should be concentrated in the village area . 5% thought they should not be 22% didn't care.

77% Agreed that preserving the existing older buildings of the village area should be encouraged . 8% disagreed, 17% were neutral.

67% Agreed that new construction in the village should be encouraged to blend with existing and traditional buildings . 12% disagreed, and 19% were neutral.

Historical Society

BOWDOINHAM is left today with some sites, a few documenting records, photographs and artifacts, and old structures that remain, too often in fragile condition. A few interested individuals are conducting most of the preservation of these assets. Until the current restoration efforts of the Town Hall, the Town has been reluctant to commit its resources toward this effort.

Founded in 1970, the Bowdoinham Historical Society was very active for more than 15 years, and has now been inactive for 10. It republished the 1912 Adams History Of Bowdoinham in 1985 (550 copies), gathered the largest single collection of records, photographs, and artifacts relating to the town, managed to index at least 48 of the cemeteries that exist in Bowdoinham, and fostered the publication of 14 historical feature newspapers called the Bowdoinham Advertiser. The display of these pictures and documents had always been a highlight of the 4th of July Barbeque, which was discontinued in 1995

The attention of the Bowdoinham Historical Society to the Town's history coupled with its many social, community-building activities and events, make the Society a vital promoter of the Town's future as well as its past.

Archeology

The following general information about the archeological resources of Bowdoinham has been informally gathered through conversations with Bowdoinham resident Henry Lamoreau.

Mr. Lamoreau has been interested in archeology and has done extensive exploring in the area. He has discussed his work with Arthur Spiess at the State Historic Preservation Commission. He has given the State all the

artifacts that he had found. On the advice of Mr. Spiess specific location information shall stay with the State.

Mr. Lamoreau has found artifacts along the shores of the Cathance and the Abagadasset River. He has found a mixture of everything from 5,000 years ago to the end of the prehistoric period.

He concludes that there were temporary settlements along the shores where the Indians hunted and fished from these relatively hidden sites. This was a rich hunting ground for deer, moose, and large flocks of waterfowl. Fishing for anadromous fish, salmon, and sturgeon was a great attraction in the region.

Most of the sites must have been sandy deposits at the time, because the Indians would choose well-drained places to settle. All of that sand has now washed away.

The Maine Historic Preservation Commission has the following inventory data, as of April, 1993:

"Twelve prehistoric campsites known. One is known to be 'not significant', i.e. too heavily damaged to be eligible for listing in the National Register. Three are probably eligible for listing in the National Register and the remaining eight are too poorly known at present to make a determination.

Threats- Need for Protection?

Mr. Lamoreau does not feel that the artifacts are threatened by human activity. Most have been washed away by natural erosion; furthermore there is not much left. The artifacts that were sent to the state were the results of hundreds of explorations. Most artifacts have washed into the rivers where they are probably embedded in the clay.

One potential threat is of excited nascent archeologists, kayak or canoe paddlers coming across an artifact of 5,000 years ago in the sand at low tide and finding the search rewarding.

It is also possible that someone, quite ignorant of the possibility of finding artifacts, excavates for a building and unknowingly throw artifacts away.

Goals And Strategies

We Find That:

- ◆ Bowdoinham is indeed a colonial and historical town. Incorporated more than a decade before the American Revolution and nearly 60 years before Maine became a state, our town numbers among the very first settled in Maine. Given its location on Merrymeeting Bay and its tributary rivers, we also know that native Americans enjoyed our

Town's lands, perhaps a thousands of years before European settlers came here to stay.

- ◆ Only threads remain of the fabric that formed our Town's earliest history. Several interviews with Henry Lamoreau, a Town resident with years of archaeological experience, indicates that several sites may date from the Ceramic period, and others from the "Red Paint" Indians. The Maine Historic Preservation Commission lists long stretches of Bowdoinham's tide water shoreline as critical areas for potential sites.
- ◆ Because of the potential of amateur archeologists finding and extracting artifacts, the best protection for archaeological artifacts is to keep the maps provided by the Maine Historic Preservation Commission on file in the Code Enforcement Office, available to the public but not published.
- ◆ Most of the extant artifacts are by the immediate shore, in sandy erosive soil. This area is protected from residential excavation by the Resource Protection District of the Shoreland Zoning ordinance. Even in the few areas where the Shoreland Zone is in Limited Residential, the 100' set back should protect the remaining artifacts.
- ◆ Fires and other natural calamities have taken a real toll on Bowdoinham's written official records. Where they exist, they are often fractured, and haphazard.
- ◆ The earliest photographs of the town date from 1870.
- ◆ In his "History of Bowdoinham" Silas Adams laments in 1912 that the Town's earliest days are a "sealed book" with early documents missing or "very meager". Certainly, little has been done in the past 85 years to remedy that situation.

Lest people be discouraged from looking into the town history, however, it should be noted that town meeting records do exist from the 1820's on. The Lincoln and Sagadahoc Registry of Deeds, Bowdoin College (James Bowdoin records), Massachusetts Archives and Maine State Archives can all be used to help recapture Bowdoinham's past.

Original surveys, household census reports, all are still available for the 1700 & 1800's and can be used to reconstruct the history of the Town.

- ◆ Bowdoinham has a number of older buildings, both public and private in ownership, that the Maine State Historic Preservation Commission deems worthy of preservation and restoration.

- ◆ Five local structures have been listed to the National Register of Historic Places.
- ◆ The Town has at least 48 cemeteries, some public, some private, some have financial support, and most do not. Maintenance of the unorganized cemeteries is a problem.
- ◆ There is strong citizen support for honoring this history in the village through renovating/restoring, preserving the old and assuring that the new is consistent with the historical traditions in the village.

GOALS

- I. To Honor and Preserve Bowdoinham's Archeological And Historical Heritage.**
- II. To Maintain Cemeteries As Historical Assets**
- III. To Recognize That Historical Records- When Properly Listed, Organized And Maintained -Have Educational, Economical And Recreational Value.**

Implementation Strategies

1. The maps provided by the Maine Historic Preservation Commission, identifying the general location of archaeological resources will be on file at the Code Enforcement office.

When a building permit is requested near those locations, the Code Enforcement Officer will provide the information on file and advise the applicant of the potential of finding archaeological artifacts. He will advise the applicant to notify the state archaeologist of any find

2. .In case the application is for a subdivision or site plan review then the Code Enforcement Officer will refer to the subdivision and site review ordinances which will have been amended to read:

If any portion of a site has been identified on the maps on file as containing historic or archaeological resources, the development shall include appropriate measures for protecting these resources, including but not limited to modification of the proposed design of the site, timing of construction, limiting the extent of excavation."

- 3.The Selectmen should establish a Historical Commission and/or appoint a Town Historian and support it with a modest stipend . This office or agency, shall be charged to:

- a. Encourage the identification, preservation, and reuse of historically significant buildings and sites in Bowdoinham.

- b. Inventory all existing sites, and then document their current ownership and condition. Copies of this inventory should be held at the Town library, offices and schools, so that the general public may have access to them
 - c. Record and present the Town's history in a manner that will encourage the residents appreciation of their town's rich historical traditions.
 - d. Work with the State Historical Preservation Committee to identify and nominate any other buildings or sites in Bowdoinham that have real significance and should be listed in the National Register.
 - e. Encourage the local elementary school to design a class in local history for students of one target grade. This would include, but not be limited to use of available maps, photographs, and books.
 - f. Develop a site in Bowdoinham for use as an educational "Town Farm". The site could exhibit local artifacts, encourage local agricultural projects, and be a novel location for meetings and seminars.
 - g. Map the town's historical locations. This should include (but not be limited to) all local cemeteries, old shipyards, sites of icehouses, inns, hotels, mills and roads that no longer exist.
 - h. Label significant buildings and sites with appropriate signage.
 - i. Encourage professional teams of university or State archaeologists to investigate known or traditional dig sites in the town of Bowdoinham.
- 4. Have the Code Enforcement Officer and the Planning Board, when reviewing building or development applications, encourage that any future development at or near the historical village be consistent with the traditional patterns .
 - 5. Have Selectmen initiate discussions on creating a trust fund to maintain all Town Cemeteries.
 - 6. Have the Selectmen do whatever they can to encourage the private operation of a Historical Society in Bowdoinham.

AFFORDABLE HOUSING

Inventory

.Type Of Housing

Most of Bowdoinham's residents live in single family homes. Table H-1 indicates housing types for Bowdoinham between 1980 and 1999

TABLE H-1					
DISTRIBUTION OF HOUSING UNITS BY TYPE					
Type	1990	%	2000	%	Change
Single Family	635	72%	836	76%	4%
2-4 Family	27	3%	20	2%	-1%
5 or more family	29	3%	29	2.5%	0%
Mobile Home	193	22%	217	19.5%	-2.5%
TOTAL	884	100%	1102	100%	32%

The 80's and 90's data are from the Census. 1999 is an update from local assessors data. There was a 64% increase in total housing units since 1980.

Two complexes of housing for elderly and low income were added in the late 80's and early 90's. Bowdoinham Estates on Preble Street, off 125 close to the I-95 interchange, is an apartment complex for elderly over 62 or handicapped over 18. There are 25 units: one bedroom rents for \$385, 2 bedrooms for \$430. This accounts for the 314% increase in >5 multi-family units.

Greenleaf Apartments, also on Preble Street, is a complex of 21 attached units in groups of 2-4 each. The rent is set at 30% of income, affordable rate for all ages. These units account for the 41% increase in 2-4 family housing.

Mobile Homes, generally affordable also increased considerably, from 118 to 214 in 1999.

Table H-2 compares housing types in neighboring communities. All of the communities are quite similar, with Topsham having a higher share of multifamily housing and a lower share of mobile homes. Bowdoinham has a higher percentage of detached single-family dwellings, which may in part be explained by the large share of existing older housing.

Table H-3 breaks out rental housing by housing type. There was a 22% increase in rental units between 1980 and 1990. The number of rental multifamily or mobile homes increased by 95% again, probably due to the elderly housing units.

TABLE H-2 STRUCTURAL CHARACTERISTICS						
Town	Total	Detached	2 - 4	5 - 9	10+ Mobile-Homes	
Bowdoin	788	62%	3%	0%	0%	36%
Bowdoinham	884	72%	3%	0%	3%	22%
Richmond	1,313	61%	11%	4%	2%	22%
Topsham	3,223	63%	20%	3%	3%	11%
Source: US Census 1990						

Vacancy Rates

Comparisons of vacancy rates between 1980 and 1990 indicate very little change. In 1980, 49 or 7% of all housing units were vacant. In 1990, 70 or 8% of all units were vacant.

Trends in Household Characteristics

Household composition affects housing demand. The national trend toward smaller families, single parents households, and persons living alone is evident in Bowdoinham as illustrated in Table H-4.

The number of people living alone increased by 40%; the number of people aged 65 or over living alone increased by 89%; and female, single householders increased by 78%. In actual housing units, about half of the increase are conventional married couple families, though the percentage change for this group is only 14%. If these trends continue, the share of married couple households will decline. The rising number of retired, single- parent and single occupant residences suggests increasing demand for affordable housing.

**TABLE H-3
HOUSEHOLD CHARACTERISTICS TRENDS**

	1980	%	1990	%	Change
Total Population	1,828		2192		20%
Total Households	672		817		
Persons per household	2.72		2.68		-1%
Householder living alone	104	15%	146	18%	40%
65 or older living alone	28	4%	53	6%	89%
Married couple family	469	70%	537	66%	14%
Female headed household	41	6%	73	9%	78%

Source: U.S. Census 1980 and 1990

Comparisons of present household characteristics in the region do not reveal any striking differences. Richmond has the highest percent of single and over age 65 householders.

□

<p style="text-align: center;">TABLE H-4 HOUSEHOLD CHARACTERISTICS 1990 Comparison by Region</p>				
Characteristics	Bowdoinham	Bowdoin	Richmond	Topsham
All Households	818	750	1,138	3,071
Persons in Households	2,192	2,207	3,072	8,613
Persons per Household	2.7	2.9	2.7	2.8
Percent married couples	66%	68%	59%	67%
Percent female householder	9%	8%	9%	8%
Percent living alone	18%	13%	23%	17%
Percent living alone 65+	6%	3%	11%	7%
Source: U.S. Census				

Housing Values

The value of housing is gathered from two sources: (1) the 1990 census, and (2) the 1998 assessors' records. (Obviously the data is not entirely comparable.) The methods of appraisal are different. The census asks the respondent to report the value; real estate appraisals separate land from building values.

TABLE-H-5
VALUE OF OWNER OCCUPIED HOUSES
Compared by Region

Town	Less than \$50K	% Between \$50-100K	% Between \$100-200K	% More than \$200K	Median				
Bowdoin	14	6	214	88	9	4	5	2	\$90,700
Bowdoinham	22	7	162	54	108	36	8	3	\$92,500
Richmond	122	27	264	59	59	13	0	0	\$74,700
Topsham	50	3	621	39	884	55	43	3	\$107,500

Source: US Census 1990

The "median" is the price at which half of all homes cost more and the other half cost less. The median value of owner-occupied homes in Bowdoinham is \$92,500, approximately \$18,000 more than Richmond and \$15,00 less than Topsham. The median rent in Bowdoinham is \$419 per month. As with owner occupied housing, Bowdoinham is between Topsham's relatively high rents and Richmond's lower rents.

The assessor's records indicate robust growth in housing construction between 1970 and the present, with an average of 10 to 15 new single family units built per year. While mobile homes are not classified by age of construction, most were certainly built since 1970 as well. The three apartment buildings were also built in this time period. There is no evidence that this pace of new construction has slowed in the late 1990's.

Assessor's records should provide up-to-date information on housing values, because the appraisals take place periodically as well as when new structures are built. According to current records, there are 984 residential structures in Bowdoinham. The average assessed value of these properties is summarized in Table H-7. The assessed value of a one acre house lot including water and septic is \$27,000. Additional acreage adds modest value to the basic one-acre valuation

TABLE H-6
ASSESSED VALUES OF DWELLINGS

Building Type	Number of	Average Building	Average Building and Land Value
1 Family	779	\$63,988.	\$103,637.
1 Family + Mobile Home	4	\$31,975	\$51,550
2 Family	10	\$53,000	\$86,170
3 Family	4	\$90,200	\$124,100.
5+ Family	1	\$94,200	\$122,500
Apartment Buildings	2	\$933,600	\$1,064,400
Mobile Home	214	\$22,045	\$47,242

Source: Town Office Assessor Database, 9-1-98

The total number of mobile homes is 214, somewhat more than the 1990 census estimate of 193. Their average value is \$22,045 with land value being more,\$47,242.

Affordability

State Affordability Standards

According to State policy, the percent of the housing stock, rented or owned, available at a sale or rental price considered affordable by people of certain income levels, should be at least adequate to meet the needs of current residents.

Affordability is defined by the percent of a household's income required for basic shelter. An affordable rent is considered no more

than 30% of the household's gross monthly income; affordable selling price means monthly payments for mortgage insurance, taxes and utilities should be no more than 30% of the household's gross monthly income.

The Maine Department of Economic and Community Development considers a very low income to be less than 50% of the County's median income; low income is between 50% to 80% of the median; and moderate income is between 80% and 150% of the median income.

Median income for Sagadahoc County in 1990 was \$31,948. Accordingly, very-low-income would be less than \$16,000 and low-income would range from \$16,000 and \$25,600. Using the 30% rule, affordable housing should cost less than \$4,800 annually, or \$400 monthly, for very low-income households and between this amount and \$7,600, or \$633 monthly, for low-income households.

Data from the 1990 census indicate that 135 (17%) of households in Bowdoinham had incomes below \$15,000, and 148 (18%) had incomes between \$15,000 and \$25,000. A comparison between Bowdoinham and Sagadahoc County on a number of poverty indicators suggests that Bowdoinham is quite similar to the County. Bowdoinham's affordability standards by income are summarized below.

Very Low-income: 135 (17%) units should be at a selling price (or at 100% valuation) of less than \$40,000 or rental less than \$400 per month.

Low-income: 148 (18%) of the total housing stock should have a sales price less than \$65,000 or rental less than \$650 per month.

These prices assume no down payment, a 10% rate of interest and no additional costs for taxes and insurance. Lower interest rates reduce the cost of housing while the addition of taxes and insurance increase costs. Price guidelines do not consider factors that lower monthly costs, such as reduced financing options, cash payments and sweat equity. To the extent that this is widespread in Bowdoinham, the affordability problem is diminished. Property taxes add significantly to the cost of owning a home in Bowdoinham. These costs are especially difficult for low and fixed income households. For instance, the annual property tax for a home at the 1990 median value of \$117,000 (the median value) was \$1,695. On a low or fixed income, that would be a significant burden.

Data on gross rents in Bowdoinham, presented earlier, show a median monthly rent of \$419. Approximately half of the housing, 50 units, would be considered affordable to the very low-income households.

Approximately 20 additional units rented for less than \$650 per month. Median housing costs for 226 owner occupied units with mortgages is \$754 per month, somewhat above the cut-off for low-income households. The median housing cost for 74 households without mortgages is far lower, at \$226. Only two of these houses without mortgages are estimated to cost more than \$400 per month.

Does Bowdoinham Meet the Affordability Standards?

The available 1990 data suggest that the supply of housing is sufficient to meet needs of low and moderate households, with two important caveats. Many of the lower cost houses in Bowdoinham are occupied by persons who have moderate or high incomes. Long time

TABLE H-7
ESTIMATES OF AFFORDABLE UNITS *IN 1992

Type of Unit	Number
Mobile Homes	193
Homes Costing Less Than \$50,000:	35
Other Less than \$12,241:	28
Rentals Costing Less Than \$500:	75

residents, for instance, no longer have mortgages on their property. The 1990 census finds that overall 17% of households in owner-occupied housing spend more than 35% of their gross income on housing.

Among renters, the census finds 27% spending more than 35% of gross income for shelter. Persons spending more than 30% of income on housing are concentrated among young and low-income households. The second caveat is that the existing housing stock may be distinct from new housing construction. For this purpose, it is necessary to consider new additions to Bowdoinham's housing stock.

TABLE H-8

NEW HOUSING STARTS

YEARS	<\$28,000			<\$50,000			<\$100,000			>\$100,000			TOTAL*
1983	3	(3)	60%	2		20%	2		20%	0		0%	10
1984							(Missing)						
1985	11	(5)	56%	6	(1)	26%	2		7%	0		0%	27
1986		(10)	24%	12		29%	13	(2)	37%	4		10%	41
1987	9	(8)	41%	3	(4)	17%	14		34%	3		8%	41
1988	35	(5)	63%	3		5%	18	(1)	30%	1		2%	63
1989	3	(5)	31%	4	(1)	19%	9		35%	4		15%	26
1990	5		31%	3		19%	5		31%	3		19%	16
TOTAL	66	(37)	46%	33	(6)	17%	63	(3)	29%	15		7%	224

Source: Town Hall Building Permits

- Columns do not total correctly, as values were not always available for mobile homes and elder housing units.
- Numbers in ()'s refer to Mobile Homes

Table H-9 indicates housing starts by price range since 1983 as derived from building inspector's records. There are some weaknesses in these data: (1) they too include the cost of the building only, not the land, and (2) the data are incomplete. 46% of the new housing starts were valued at less than \$28,000. Though land values are not included, the 10% goal appears to be obtainable. If a large proportion of the people did not have to mortgage their land, or if the size of the lot was less than one acre, then it is possible that the new starts are affordable by low-income households. With the qualification, the tentative answer is "YES" to the question of affordability. If these trends continue, then an adequate share of new housing will meet affordability criteria.

Survey Results

The community survey asked several questions related to tenure and perceptions of housing needs in Bowdoinham. 95% of the survey respondents own their own home, greater than their 87% share of the market. Only 12% of these respondents own less than one acre of land.

The only survey question on which there was strong agreement was whether respondents wanted to see housing for the elderly in the Village the response was far more positive.

69% "Yes"
11% "No"
19% "Don't Care" or "Don't Know"

The least popular proposal involved lowering lot size requirements for low-income households (69% opposed). 60% supported encouraging the use of property tax rebate.

Analysis

During the 1980s and into the 1990s Bowdoinham has experienced moderate population growth and moderate pressures to provide new housing. During the 1990's Bowdoinham's growth was nearly 30%. Real estate values in recent years have increased steadily. Future demands for new housing are likely to stimulate low density and infill development, with a mix of higher cost stick-built housing and lower cost mobile homes.

It does appear that for new home seekers, whether local people making new homes or others coming in, the cost of land and the need for lots adequate to permit septic fields will pose a significant obstacle to affordability. Mobile homes, the new 25 unit elderly housing development, and low-income housing projects indicate that Bowdoinham is accommodating new affordable housing.

Compliance with State Planning Office requirements for mobile home sites and other housing affordability programs is achievable under current market conditions. The comprehensive planning survey indicates willingness within the community to permit future development of affordable housing.

Goals and Strategies

We Find That:

The data suggest that Bowdoinham historically has met the State requirements for provision of low and moderate-income housing through ordinary market processes. Bowdoinham's desirable location, population growth (nearly 30% over the past decade) and economic development of the region will push land and housing prices higher in the future.

The value of new and existing housing as monitored in the property tax assessment process will help to inform the Town as to whether housing affordability is threatened. The most often mentioned concern is that property taxes keep rising and people's incomes do not. The Maine State Legislature recently created the Homestead Act, which offers property tax relief for homeowners.

As families find that they wish to offer both some measure of independence plus support for parents or adult children, it makes sense to allow the minor modification of adding a second kitchen or bath. It also creates an affordable solution to the elderly or the temporarily displaced. These conversions are usually referred to as "mother-in-law" apartments.

GOALS

- 1. The town should allow for a full range of housing types to be developed in Bowdoinham**
- 2. The Town should provide one or more areas in Bowdoinham to allow for the development of mobile home parks as required by State law.**
- 3. The Town should provide opportunities for families to support and provide for their members housing needs.**
- 4. The Town should provide incentives to developers to make their housing units affordable.**

Strategies

1. Amend the Land Use Ordinance to update housing requirements.
2. Allow mobile homes wherever single family homes are permitted..
3. Encourage and help people participate in the state's homestead property tax relief program
4. Allow conversion of dwellings to accommodate "mother-in-law apartments"

NATURAL RESOURCES

Merrymeeting Bay Ecological System

Bowdoinham is extraordinarily fortunate to abut such a unique feature as Merrymeeting Bay. Throughout the Town's history, and still today, the Bay has played an important role in shaping the character of Bowdoinham and its inhabitants. Formed by the confluence of the Kennebec, Androscoggin, Cathance, Abbagadasset, Muddy, and Eastern Rivers, Merrymeeting Bay and its one outlet, the Kennebec, drain more than 9,000 square miles of Maine. The Merrymeeting Bay/Kennebec/Sheepscot River system is the largest freshwater estuary and tidal riverine system north of Chesapeake Bay with most of its 11,000 acres located above Chops Point.

Merrymeeting Bay is recognized to be of national and international significance as a stopover area for migratory waterfowl and as a spawning area for a number of anadromous fish species.

Natural Resources

Please refer to map attached to this section

The Bay has about 100 miles of shoreline, and about 3,300 acres of tidal mud flats. This meshing of habitats, constantly nourished by the freshwater tidal exchange has given rise to a nutrient rich ecosystem that historically has hosted substantial numbers of fish and wildlife. Much of the fish population in the Bay is anadromous, which means they use the riverine system as a spawning ground and nursery habitat, spending most of their adult years at sea. The anadromous species include the Atlantic Salmon, Atlantic and Shortnose Sturgeon, Striped Bass, Rainbow Smelt, Alewives, and American Shad. Other species in the Bay include Carp, Perch, and American Eel.

An Abenaki name for the Bay was Quavacook, meaning "many duck water", or "Duckwater Place". Current waterfowl populations are far below those described in historical accounts, but can still be considered substantial. Reasons for the decline of the migratory game birds are generally attributed to a combination of factors, including over hunting, pollution, loss of critical habitat along the flyway, some geographical movement of the flyway, and the use of and subsequent ingestion of lead shot. Recent regulations have reduced pollution and banned the use of lead shot in this region, but whether avian populations can ever be restored to historic levels despite permanent habitat loss is unknown.

Of the approximately 9,600 acres in the Bay, about 4,300 acres are intertidal and of these, 3,300 (78%) are covered with aquatic vegetation. These mudflats are characterized by mucky sediment over sandy, silt or clay soils mostly formed from the sedimentation of silt and sludge from upstream. While this material can be very productive for organisms at the bottom of the food chain, it also may entrap toxins.

Typical overstory plants of the Bay are wild rice and soft stem and three-square bulrush. Bushy pond weed, musk grass, bladderwort, and pond weed compose some of the understory species. Different grasses, sedges and some cattails predominate in the Bay's many marsh areas. When moisture declines, with elevation gains, vegetation species become woodier and include more grasses, blackberries, alders, willows, red maple, and ash. Uplands in the Bay area contain alder, maple, ash, spruce, fir, oak, pine, birch, poplar, hemlock and tamarack.

Upland forest habitat prevents erosion and siltation by protecting against excess runoff, allows recharging of our aquifers. Mammalian wildlife found in the Bay's surrounding forests include deer, coyote, moose, porcupine, red fox, weasel, mink, raccoon, fisher and skunk. Upland and lowland game birds like ruffed grouse and woodcock are also found.

Outdoor Recreation

While resource based economies utilizing the Bay have dropped as lifestyles and job opportunities have changed, outdoor recreational use of the Bay has increased.. Recreational activities that may take place on and around the Bay include swimming, boating (power, canoeing, kayaking and sailing), camping, picnicking, hiking, bird watching, snow mobiling, ice skating, skiing, fishing, hunting and horseback riding. All of these activities may be done on a private basis. Some like ice fishing, duck hunting, kayaking and tour boats from down the river also have a commercial basis whether through license fees, the hiring of guides and instructors, or the provision of supplies (i.e., bait and camp rental).

To a large degree, all of these activities depend upon accessibility (trails or boat launches) and an actual aesthetic and physical quality to the environment in which they take place. The quality of our outdoor experience is based in large part on the quality of the environment we are using. It therefore behooves us to maintain that environment in a state that we may continue to enjoy.

Rivers and Streams

Bowdoinham is surrounded by and laced with rivers and streams. All tidal rivers will be considered part of the Bay. Non-tidal streams draining into tidal waters impact on the Bay and significantly contribute to the natural environment of the Town. Bowdoinham has approximately 35 miles of shoreline on Merrymeeting Bay, more than any other town.

The Kennebec River forms the eastern boundary of Bowdoinham. The Kennebec is a major river of Maine, draining one-fifth of the total area of the

State. The classification¹ of the River from Augusta to a line drawn due east of Abbagadasset Point (which is at the end of Brown's Point Road) is classified C. From Abbagadasset Point to the Chops Merrymeeting Bay is classified B. It should be noted that the Legislature added this very specific language to the B classification of the Bay:

"Further, the Legislature finds that the free-flowing habitat of this river segment provides irreplaceable social and economic benefits and that this use shall be maintained."

The actual water quality of the Bay is unknown. There has been very little monitoring of the Bay. Dioxin, lead and various toxins have been found both in rivers and out in the ocean. Some chemicals, no longer even used, may very well be in the bottom sediment. Minor tributaries to the Kennebec, all the way to Brown's Point, are Class C.

Baker Brook runs North to South from the Richmond Border until it runs into the Abbagadasset..

The Abbagadasset comes to Bowdoinham from Gardiner, through Richmond. It runs among extended wetlands between Carding Machine Road and Route 24 and into the Bay just beyond Brown's Point Road. It is classified C.

Denham Stream is the next stream running North to South. It comes to Bowdoinham from Richmond. It flows between the White Road and the Ridge Road. It appears to have steep slopes. It does not appear to have residences anywhere near it. The predominant land use in the immediate watershed is forestry. It runs into the West Branch of the Cathance.

Mallon Brook seems to get its start West of the Post Road and runs into Sedgely Brook.

Sedgely Brook seems to get its start right in Bowdoinham between I-95 and the Old Post Road. It runs south right in the middle strip of I-95, then crosses under the Ridge Road to enter the top of the West Branch of the Cathance. It is classified C. It runs through hilly country, farm, and forestland; again, no residences appear to be along its shores.

The West Branch of the Cathance appears to be no more than a mile stream formed by the confluence of the Sedgely and the Denham streams. It runs between the Ridge Road and River Road into the Cathance where the Railroad and the Route 24 coincide, very close to the village.

-
- A. ¹ Water Quality Classification System- the State system (Title 38, Article 4-a subsection 464 is based on a combination of current and desired quality. It is usually not set so far ahead of the current quality that it becomes politically unacceptable.
 - B. Class A, and AA are the highest quality and D the lowest- basically an open sewer- Since that is now illegal by federal law there are no Class D Rivers.

Carros Brook or Heath's Brook seems to get its start about a third of a mile East of Millay Road where it crosses I-95. It meanders right through the Village.

Shinglemen's Creek - Runs into the Cathance about one-half mile North of the Topsham line. It gets its start around I-95.

Sampson's Creek (or Puddledock) is that body of tidal water next to the gas station, exiting to the Cathance.

The Cathance River forms a horseshoe shape in Southern Bowdoinham. It comes to Bowdoinham from Topsham; Bradley Pond is its headwaters, it flows by a cattle farm in Topsham, but after that its shores are still undeveloped. It flows through the Village, where the new Cathance landing boat access and Park are along its shores.

Threats to Water Quality

The potential threats to surface and ground water quality come from two categories of discharges: the point sources at the end of a pipe, and the non-point, or dispersed, sources.

Bowdoinham is at the end of two long rivers that carry the waste products of numerous paper mills and effluent from many municipal treatment systems.

Non-point source possibilities include malfunctioning septic systems. This could be a problem, although, in spite of considerable effort, has not yet been demonstrated in the Village (for further discussion on sewer issue see Public Services- Section)

There are other potential sources of contamination. They include, but are not limited to:

- ◆ The apartment units on shallow bedrock soils on the Cathance at head tide in Topsham
- ◆ Closed dumps in the Denham and Abbagadasset Watersheds which are monitored by test wells;
- ◆ Fertilizer (nitrates) up river from the site of the chemical plant at an abandoned farm;
- ◆ Pesticides, fertilizer, manure, and sludge used in farming and residential lawns and gardens
- ◆ Erosion of soil from plowing or wood cutting operations along the streams

It is not known that any of these potential sources of contamination have become actual. There are State policies and laws in place to prevent problems, but Town and individual vigilance in locating problems should be encouraged.

Flood Prone Areas

These are depicted on the map and, as can be expected are associated with the rivers and streams. Their extent varies and has to be learned from viewing the map. When left undeveloped, flood prone areas hold water and prevent damage to roads and property. They, as wetlands, also serve to filter potential contaminants and provide habitat for fish and wildlife. Developments without regard to the flooding diminish these protective values, and invite costly flood damage.

Groundwater Resources

Precipitation that does not run off as surface water infiltrates the soil. Some may remain near the surface as soil moisture, where it is drawn up by the roots of plants, but much of it continues to percolate downward, becoming groundwater. Depending on underground conditions, recoverable groundwater supplies may be plentiful or scarce in any given location. Because virtually all of Bowdoinham's drinking water is drawn from groundwater sources, this is a particularly important resource.

Bedrock Groundwater Resources

Groundwater is found in the cracks and fissures of the underlying granite bedrock (ledge). From wells drilled in bedrock there are usually a relatively low yields and sometimes wells must be drilled to depths of several hundred feet to obtain adequate yields for household use. Typically, yields are below 10 gallons per minute (gpm). Occasionally, there are high yield bedrock wells, but these are rare. Nearly all of Bowdoinham's private wells draw groundwater found in bedrock.

Sand and Gravel Aquifers

In one part of Bowdoinham, however, groundwater is available in higher yields from sand and gravel deposits that lie below the ground surface, but above the bedrock. These deposits, known as a sand and gravel aquifer, are highly porous and allow for both storage and release of greater volumes of water through shallower wells that do not need to penetrate bedrock.

Sand and gravel aquifers have been mapped for the State of Maine by the Maine Geological Survey. In Bowdoinham, the only sand and gravel aquifer is located in the Brown's Point area. It has an estimated yield of 10 to 50 gallons per minute, which is suitable for a small public water supply. – (A private home uses between 160-180 gallons per day). There is another sand and gravel aquifer of significance to Bowdoinham because it is a source of supply for the Bowdoinham Water Company. It is located in Bowdoin. Its yield is listed as 210 gallons per minute or 302,000 gallons per day. – The Public Water System is described in another section of this Plan.

Threats to Groundwater Quality and Quantity

Because sand and gravel aquifers are porous and transmit water rapidly, they are susceptible to pollution. Once a pollutant enters an aquifer, its movement is governed by the groundwater flow, and it may remain in the aquifer for an indeterminate period. The impact of a pollutant on an aquifer depends on the size and characteristics of the aquifer and on the nature and amount of pollution that is introduced. Sources of aquifer pollution are often located on the ground surface directly above or contiguous to the aquifer. Septic tank effluent, landfill effluent, leakage from ruptured and/or abandoned fuel tanks, uncontrolled hazardous materials sites, road salt, sand-salt storage piles, and agricultural fertilizers and pesticides are all possible sources of aquifer pollution.

Drinking water threats may be particularly acute to those residents with dug wells or well points. East Bowdoinham lies atop a shallow aquifer and as such is particularly prone to water quality threats from the surface.

Since there are not many high yielding sand and gravel aquifers in Bowdoinham, there is reason to be concerned about interfering with the ability to collect rain water. The productivity of an aquifer can be limited by covering the ground surface above it with impervious material. Extensive paving and building coverage can prevent water from quickly entering the ground and replenishing the groundwater supply. Gravel mining may expose the water table to direct pollution and may result in increased evaporation.

The town's planning process should carefully assess the availability of the aquifer in terms of present and future demands for water; the potential lasting values of the aquifer should not be jeopardized by excessive exploitation of their other values.

Marine Resources

Anadromous Fish²

The tidal riverine system of Merrymeeting Bay is unique and important. No other river system in New England even comes close to containing this amount of tidal freshwater, which makes the area famous for its abundant anadromous fish runs..

The Bay and Kennebec River System is the only system on the Atlantic Coast to support the spawning of all ten anadromous fish species found in the Gulf of Maine. It contributes fish species to the marine waters of the State of Maine, other Atlantic States, and Canada. Only Chesapeake Bay, on the East Coast, may surpass the Bay's significance for anadromous fish.

C. ² Most of this material is excerpted from studies and reports by the Department of Marine Resources and personal interview with Lew Flagg, who authored most of them. He is the state's expert on Anadromous fish

Historically, the Atlantic Sturgeon, Striped Bass, Smelt, Alewives, and Shad have all been plentiful enough to support commercial fisheries in Bowdoinham. Fish populations now are far below past values due mainly to industrial pollution, obstruction of upstream and downstream passage to vital spawning grounds and overfishing.

Current trends towards some higher fish populations reflect improved water quality, restocking efforts and improved fish passages at dams.

Short-Nosed Sturgeon This habitat now supports and is critical to the survival of the Short-nosed Sturgeon, on the Federal Endangered Species List. The only known viable population in the State of Maine is found in the estuarial complex of the Kennebec and Sheepscot Rivers.

Atlantic Sturgeon Lew Flagg is optimistic that with improved water quality, the Sturgeon will rebound and that the Bay will probably support the largest population in the State of Maine, if not New England. This is considered a threatened species though here it appears scarcer than the short-nosed.

Striped Bass the Kennebec River once supported the only known run of striped bass in the State of Maine before they were exterminated by severe pollution. Tagged striped bass of Hudson River and Chesapeake Bay origin have been recaptured in the spring and summer fisheries in the Saco, Kennebec and Androscoggin River estuaries.

In 1982 the Department of Marine Resources initiated a program to restore a spawning population of striped bass to the lower Kennebec/Androscoggin Rivers and tributaries.

In 1987, 26 wild young-of-the year striped bass 2-4" in length were collected at three separate sampling locations.. This represented the first documented spawning success of striped bass in the Kennebec River estuary in 50 years. In 1991, a total of 63 seine hauls yielded 16 striped bass. It is obviously a painful, tedious, process to bring back the natural fishery into the area. Stripers have continued their resurgence so much so that by 1997 the sport fishing for them has become quite popular and an economic boon to the area.

Alosids - Alewives and American Shad and Blueback Herring, 1991 Report
As in the past, the catch per standard seine haul of juvenile alosids continues to be more abundant in Merrymeeting Bay and its smaller tidal tributaries than in the main stem of the Kennebec River. The greatest catch per standard haul for juvenile alewives was in the Abbagadasset River, next most caught are in the Cathance, then Eastern River and the Androscoggin.

The Maine Department of Marine Resources has an aggressive alewife-stocking program that has been quite successful. Alewives are at present the most economically valuable of the anadromous species with the catch predominantly sold as lobster bait.

The tidal waters in Maine supported the largest fishery for American shad in the US north of the Hudson River in the late 1800's and early 1900's. The 20 miles of tidal freshwater below Augusta provided 50% of the spawning and nursery habitat for shad. They spawn in May and June. However, by the mid-1930's the shad resource was severely decimated by increased pollution from the Androscoggin and Kennebec Rivers. Over 50 years after access to upriver spawning areas was blocked, the shad continued to support a commercial fishery of over 800,000 pounds in the tidal waters. It is expected that shad will recover with improved water quality and will support one of the largest shad runs in Maine.

American smelt is one of the most important resident anadromous species on the coast of Maine. It is a close relative of the Atlantic salmon.

Like other anadromous species, they attain most of their growth in the marine environment. They feed in the bays and lower tidal reaches of rivers in early autumn and winter. They go to freshwater to spawn as the ice goes out and the water temperature increases.

These have been more successful than others in maintaining their population in spite of pollution, but they were more abundant in the past

Recreation Fisheries

The estuarial complex of the Kennebec and Sheepscot now support the largest winter recreational fishery for smelt on the East Coast.

There are four smelt camp rental operations in Bowdoinham for a total of 80 camps..

Commercial Fisheries

Prior to the late 1920's, Merrymeeting Bay and the lower Kennebec/ Androscoggin Rivers supported large commercial fisheries for American Shad, river herring, rainbow smelt, and striped bass.

The Department of Marine Resources is optimistic that cleaned up rivers, along with the restoration projects, will restore a commercial shad fishery.

"A fully restored run would be capable of supporting a commercial fishery of 500,000 to 725,000 pounds annually with a landed value of \$250,000 to \$362,500".

It appears that the major commercial fishery out of Bowdoinham is for eel. Sources estimate that between the several eelers that fish the Bay from Bath, Dresden, Bowdoinham and Topsham, total catch can be as much as 10-15,000 lbs in a good week. At present, two people account for most of the eeling in Bowdoinham. The market is in Europe, spring, and early summer is the season for marketable river eel. Local fisherman use the Town Landing and the private landing across from it.

Eel are catadromous, the opposite of anadromous. They spend most of their lives in fresh water then travel as adults to the Sargasso sea near Bermuda to spawn and die. The young "glass eels" take about a year to drift back to offshore Maine waters where they subsequently swim back upstream as "elvers".

Town Landing and Access

In the past, local fishermen did not think there was any problem here. The Town landing is used and essential for the fishermen though most of their activities are now centered at a private landing across the river. They reported no conflicts with recreational users. With the newly renovated landing bringing increased boat trailer activity, the potential for future conflicts in the launch area may have increased.

Threats to Anodromous Fish

Anadromous fish are very sensitive in their early life stages. Anything that diminished the spawning areas and the water quality is a threat to the anadromous fish..

Striped Bass are most sensitive to pH and dissolved oxygen depletion. Young anadromous fish are also sensitive to aluminum ions.

What happens up river is probably more important than what we do in Bowdoinham. Local fishermen notice the effect of periodic spills of chemicals on fish. The concentrations of toxic substances probably pose a large threat. Some have become concentrated in higher level species in the food chain.

Some think chlorine from municipal treatment plants may be a threat to the spawning area. The discharge of domestic sewer is probably less harmful to the spawning fish than the chlorine in the treated effluent. However the E coli is harmful to a lot of animals, people included, and if not chlorinated or treated with an equally effective disinfectant, the goal of upgrading the classification will be much more difficult to reach

John Sowles, Aquatic Biologist at Maine DEP in a paper titled Headwater Streams and Their Riparian Zone: The Key to Our River Resources discusses the impact of man's activities on water quality and hence on marine resources.

" Silt, for example, is not just aesthetically unappealing, it suffocates fish and other aquatic residents. . Heavy metals, hydrocarbons, and pesticides (buried in the silt) can be toxic to humans as well as aquatic life.

In the stream channel itself, vegetated buffers stabilize stream banks, preventing their slumping and subsequent downstream siltation. Vegetation along streams also shades the water to maintain the cool, clean environment essential for cold water fish species such as trout and salmon."

WETLANDS

Definition

The first issue is the definition and delineation of a "wetland" or what constitutes a wetland. There are certain legal minimums defined in State law. But in the end, Bowdoinham will protect those wetlands valuable to it.

Federal wetlands programs define wetlands based upon vegetation, soil type and hydrology. State wetland descriptions (19 types) are based on similar criteria and found in the Maine Wetlands Inventory: MDIF&W, 1972 (revised 1990).

Our own Shoreland Zoning has a few definitions:

Coastal Wetland: All lands below any identifiable debris line left by tidal action; with vegetation that is tolerant and occurs primarily in salt water or estuarine habitat; and any swamp, marsh, bog, beach, flat or other contiguous low land which is subject to tidal action during the maximum spring tide

Fresh Water Wetland: Freshwater swamps, marshes, bogs and similar areas which are:

1. Ten or more contiguous acres; or of less than ten contiguous acres and adjacent to a surface water body, excluding any river, stream or brook such that in a natural state, the combined surface area is in excess of ten acres; and
2. Inundated or saturated by surface of groundwater at a frequency and for a duration sufficient to support, and which under normal circumstances do support, a prevalence of wetland vegetation typically adapted for life in saturated soils.

Values of Wetlands

Wetlands serve numerous critical ecological, economic and recreational functions:

Habitat for nesting, and early nourishment for fish, waterfowl, amphibians, birds and reptiles. Small and large mammals, including muskrat, beaver, mink, otter are also found here. Moose and deer are attracted to these areas because of the availability and abundance of food and cover.

Food Supply - A rich fauna of aquatic invertebrates, fish species and aquatic vegetation is at the bottom of the food chain for a complex variety of water dependent species.

Staging Area for Migrating Birds - This is one of the reasons Merrymeeting Bay is of National significance.

Maintaining Water Quality - Wetlands act as traps and filters for nutrients, sediments and pollutants.

Groundwater Discharge Areas - Discharging groundwater is often the start of streams and rivers and is a source of water for aquatic ecosystems.

Flood Prevention - During storms, wetlands help spread the peak flow volume. Headwater wetlands act as storage basins which release water slowly to feeder streams, thus helping maintain even stream flows and temperatures. Dense wetland vegetation impedes water movement, thereby increasing effective storage.

Recreation and Education - Humans enjoy wetlands for hunting, fishing, boating and nature study. Wetlands are a rich library for ecological researchers.

Open Space and Aesthetics - The broad expanses of lush tidal freshwater marshes juxtaposed with open water are important features of Bowdoinham's landscape. Forested wetlands present the visitor with a rich mosaic of trees, shrubs, ferns and delicate wildflowers.

Travel Corridor - Wetlands often serve as travel corridors for many wild creatures.

Contain Critical Areas - The State Natural Areas Heritage Program has identified a number of spots which are sites of plants of limited occurrence, or limits of their range.

Groundwater Recharge - Wetlands act like a giant sponge. The sponge like soil absorbs, then slowly releases water into the groundwater. Since Bowdoinham is not rich in sand and gravel aquifers, this value of wetlands is important for the Town.

Habitat for Songbirds - Shrub, swamps and forested wetlands provide habitat for fewer water-dependent species, but probably support a greater diversity of songbirds than any other wetland type.

Economic Value When agriculture dominated New England, wetlands were important for timber and hay production. Forested wetlands are still important producers of spruce-fir timber, but generally produce lower value forest products such as firewood.

Contribute to the Net Volume of Wetland - Nationwide wetland inventories revealed that by mid-1970, more than one half of the wetlands in the lower forty eight states that existed prior to European settlement had been drained or filled for farming, urban development or industry.

Wetland Rating/Classification Schemes

The State and federal government have attempted to rate the value of wetlands. The Department of Inland Fish and Wildlife has used a rating

system to describe the wetlands' value for fish and wildlife as high, medium, low or indeterminate. The information they provide can be used as a guide.

The Maine Department of Inland Fisheries and Wildlife also rates coastal wildlife concentration areas into Class A, B, and C. The US Fish and Wildlife Service has classified certain wetlands and adjoining uplands as high or moderate value habitat for federally listed threatened or endangered species. "Indeterminate" means they know there is a wetland there but have not determined its value.

The State DEP has a classification scheme in an attempt to determine the type of permit required. It rates Class I, II or III, depending on its location and flora and fauna. Class I is the most valuable. It contains threatened plants, habitat, or travel corridors for wildlife and birds, or is a nursery for anadromous fish.

Maps have been prepared for this plan depicting some wetlands, including some of those identified by Garrett Clough from his study in 1979 when he actually did field surveys.

In Bowdoinham We Have ...

Garrett Clough's "The Wetlands of Bowdoinham" (State Planning Office, 1979, reference number 15-79) indicates that Bowdoinham includes 1,090 acres of wetlands. But when we break that figure down, we discover that 461.5 of it consists of tidal wetlands along the Bay (including the tidal reaches of the tributary rivers), and another 488.5 acres consists of shrub swamp and wooded swamp. If we exclude streams, the Town possesses only slightly more than 100 acres of non-tidal wetlands that have standing water all year round.

This relative lack of wetlands makes what we do have particularly important. Several sites have actual or potential value as waterfowl or wading bird habitat (see list following), and help sustain the Town's population of fur-bearing mammals: muskrat, otter, mink, and beaver. All, including shrub and wooded swamps, contribute to the variety of vegetation and habitats in the Town: deer, grouse, woodcock, several species of warblers, and such comparatively uncommon birds as pileated woodpeckers are among the beneficiaries.

a. Using the map and list prepared for us on June 5, 1991 by IF&W, Bowdoinham has the following wetlands which is waterfowl and wading bird habitat of "Indeterminate" rating:

WWH-030216 – is at the end of Centers Point Road, in East Bowdoinham.

WWH-030222 - Between Carding Machine Road and the White Road, near the Dinsmore Cemetery.

WWH-030627 - At the Northern end of the Abbagadasset Road, adjacent to the railroad tracks.

b. Coastal Wildlife Concentration Areas:

The entire Merrymeeting Bay in Bowdoinham is a Class A Coastal Wildlife Concentration Area.

The entire Abbagadasset, West Branch and Cathance Rivers, are Class B, Coastal Wildlife Concentration Areas.

c. DEP's system - It would appear that all of these identified areas qualify as Class I of DEP's system.

Threats to Wetlands

Wetlands are some of the most sensitive and vulnerable habitats. Land use activities such as draining, filling, and waste disposal can significantly alter or destroy the value of these areas for wildlife. Land clearing or development in the adjacent upland habitat, or "riparian" zone, can also degrade a wetland's value. Building on or too close to a wetland can affect water quality and quantity.

The development and use of shorelands directly influences near shore water quality. Inadequate septic systems, storm water runoff (from paved areas of heavily fertilized or sprayed farmland or forestry clear cutting operations) may lead to contaminated water flowing into the wetlands.

Groundwater polluted by leaking underground fuel tanks, abandoned dumps or failing septic systems may seep into the wetlands, especially at discharge points.

Wildlife Habitat

Habitats: Their Values and Vulnerability⁴

Bowdoinham is extraordinarily rich in wildlife habitat. The official definition of Essential Habitat areas that provide physical or biological features essential to the conservation of an endangered or threatened species in Maine.

Significant Habitat is also protected in Maine. These lands are identified by the Natural Resources Protection Act (NRPA):

The Department has identified and mapped certain habitats. They are depicted on the maps prepared for this plan and are assigned numbers, given below.

D. ⁴ This is summarized from a report prepared by the Department of Inland Fish and Wildlife

Bald Eagle Nest Sites

Bald Eagle nest sites are the only areas currently designated as an Essential Habitat by the IF&W. Bald Eagles live along wooded shorelands near large expanses of open water.. They mate for life, often building multiple nests within one mile of each other that may be used alternately, in different years.

Eagles are somewhat tolerant of human activity during non-breeding season, but active nest sites are easily disturbed, and must be protected from human disturbance.

In Bowdoinham, IF&W has identified nest sites. Bald Head in the Bay,(the third outcropping north of Center's Point) is considered an active nest site. Its Identification number is BE010E. Another active nest site is located on Swan Island in the Kennebec River# BE008H. These active nest sites are classified as Essential Habitat. Within one quarter mile of either site, proposed development and other land use activities requiring a permit or using state or federal funds must be reviewed and approved by the Commissioner of Inland Fisheries and Wildlife. Part of the area within one quarter mile of nest site No. BE008H is located in Bowdoinham. Without any further activity, site No. BE008H will retain its special status through the year 2000. Eagle nest sites retain their active status for 5 years from the last date of actual nesting activity.

Bald Eagle Wintering Areas

The following areas are important shorelines used by both resident breeding and transient bald eagles: Brick Island; Pork Point; Abbagadasset Point; Center Point and the shore within one-half mile West; and the Cathance River from the mouth upstream to Topsham and the Muddy River.

Ribbon Snake Habitat

There is a 1986 record of a Ribbon Snake on the edge of a farm field next to a swale off Brown's Point Road. It is therefore considered an "Essential Habitat".

Waterfowl and Wading Bird Habitat

Waterfowl and wading birds are a diverse group of species, which make significant but not exclusive use of wetlands. They are defined in Maine statute as species of the family Anatidae, which include ducks and geese, but not grebes and loons. Wading birds are considered to include bitterns, herons, egrets, ibis, rails, coots, and moorhens.

The habitats are divided into three categories:

a. *Breeding Habitat*: includes nest areas for courtship and seclusion, concealment for nest protection, and herbaceous vegetation for feeding.

b. *Migration and Staging Habitat*: includes productive feeding areas and seclusion from disturbance, often associated with coastal estuarine areas.

c. *Wintering Habitat*: open water areas associated with tidal action or strong currents remaining ice-free during extreme temperatures. Nearby sheltered areas provide protection from climatic extremes. Isolation from human activity is important to minimize increased energy demands resulting from frequent disturbance.

Duck species familiar to the Bay include Black Ducks, Mallard, Blue-winged and Green-winged Teal, Wood Ducks and Common Mergansers. Other species include Great Blue Herons, Canada Geese, Greater and Lesser Yellowlegs, American Bittern, Northern Bald Eagles and the American Osprey. The decline of eagles in the Bay from a high of 10 to 20 down to 2 to 4 pairs illustrates well the harmful legacy we have left.

Waterfowl and wading bird habitats identified by IF&W include:

WWH-030216 - At the end of Centers Point Road, in East Bowdoinham.

WWH-030222 - Between Carding Machine Road and the White Road, near the Dinsmore Cemetery.

WWH-030627 - At the Northern end of the Abbagadasset Road, adjacent to the railroad tracks.

Shorebird Nesting, Feeding, Staging Areas

Shorebirds are sand pipers, plovers, turnstones, curlews, dowitchers and phalaropes. Several of these birds depend on coastal habitats in Maine for feeding and resting during their long migration from Arctic breeding grounds to South American wintering areas.

Deer Wintering Areas

White tailed deer live near the northern limit of their range in Maine. Winter is a time of severe stress for deer. To minimize winter stress, deer move into traditional deer wintering areas or "yards" which offer protection from wind and cold temperatures. These areas typically have dense softwood cover, which intercepts snow and offers shelter from the wind. Wintering deer often prefer south facing slopes.

There are 10 sites identified, numbered, and mapped.

At the Bowdoinham Wildlife Management Area at the end of Wildes Road.
(#020094)

West of the Railroad Line, East of the Fisher Road and just South of 125.
(#020581)

West of the Abbagadasset Road all the way to the Railroad, and from the Brown's Point Road north, about a mile, until the Abbagadasset Road stops being paved. (#020580)

Between Fisher Road and I-95 starting about 4000 feet south of 125 and then going on for about 1 mile. (#021011)

Denham Stream (# 020578- a large area, could be as much as a 1000 acres, between the White Road and the Ridge Road, including Denham Stream.). There are also (#020577) and (#020566 north of #20578)

The Abbagadasset River between the Carding Machine Road and the railroad-starting about where the cemetery is, north to the gravel pit. (#020579)

North of Mallon Brook all the way to Richmond between the Post Road and the Dingley Road. (#020565)

Just south of Richmond (most of it may be in Richmond) between the Carding Machine Road and the White Road. (# 020560)

Another one mostly in Richmond, by Baker Brook east of Carding Machine Road, the former Alice Wheeler Farm. (# 020886)

Threats to Wildlife Resources

The use of DDT in the 1960's for mosquito and black fly control as well as agricultural use has left residues in the animal food chain that persist today. Any species at the top of a food chain will accumulate whatever toxins persist lower in the food chain. Eagles and humans share this trait. It is well known that one effect of DDT is to cause thinness in eggshells with subsequent collapse. A twenty percent reduction in thickness is considered fatal. In 1994, an unhatched eagle egg from Bowdoinham showed the highest level of dioxin ever recorded anywhere.

Mammals and birds living in wildlife travel corridors are increasingly susceptible to predation, disturbance during breeding season, and competition for smaller available territory.

Development in or near deer wintering areas may decrease the survival of wintering deer, resulting in lower average population densities. Deer in winter are susceptible to predators, especially domestic dogs that may live in developments in or near deer wintering areas.

Critical Areas - - Rare And Endangered Plants

The Value of Rare Plants

In an effort to encourage the protection of native Maine plants that are naturally reduced or low in number, the Maine Natural Areas Program, part of the Maine Department of Conservation, maintains and updates a list of

endangered and threatened plants. As others rare or threatened become known they are added to the list.³

The purpose of the list is to: 1) assist state agencies and conservation organizations in setting priorities for botanical inventories; 2) be a planning tool for industry, developers and planners at the state and local levels to use in site evaluations; and 3) inform botanists, ecologists, interested citizens and landowners about species that are rare and significant.

"It is hoped that the list will inspire the public to share their knowledge of these plants with other individuals, agencies and organizations."

"These plants, which have taken thousands of years to evolve, are disappearing without ever having been discovered or named. Whether of potential medicinal, horticultural or agricultural use, any benefit they may have had for our species vanishes with them.."

We have an exceptionally long list of unique, endangered, threatened or at least monitored plant life. The list is long because they are unique to Merrymeeting Bay. They are marked on a natural resource map in general areas; listing specific location is not considered wise. Nearly all of Bowdoinham's Bay and tidal river shore may be considered possible habitat for plant species listed as rare or exemplary by the Maine Natural Areas Program.

Threats to Rare Plants

The greatest threat to rare plants is habitat loss, including industrial or residential development, changes in water distribution and quality, and forestry and agricultural practices that alter the habitat.

Over-picking or digging of plants for horticultural purposes and trampling or other disturbances caused by heavy visitation are also threats. Undue publicity of the site can lead to such exploitation.

Threats from Pollution

Most attention in the natural resources section deals with water related issues. This is appropriate since we front on the Bay and have three rivers and many streams running through the town. The importance of our wetlands in themselves and as the source of our drinking water have been discussed

There are also several threats to the land that need to be considered. The effect of "acid rain" on farmland and forest is well known and beyond our

E. ³ "Maine's Endangered and Threatened Plants" published by Maine's Critical Area, 1990

local control. Other air born problem chemicals are somewhat under our control.

Bowdoinham has one of the best-regarded recycling programs in the State. Not only does it recycle a good proportion of the town's waste stream; it also solicits and safely disposes of household hazardous wastes. That part which people do not bring in however, is either taken to an incinerator in Auburn or is burned at each residence. The plant in Auburn is efficient in burning product at high temperatures yet toxic emissions are produced which the prevailing wind blows back over Bowdoinham.

The EPA states that emissions from 8 low tech, low temperature "burn barrels" equal the polluting discharge from a large commercial incinerator. By encouraging more recycling and discouraging the use of burn barrels the town could directly effect the air we breath. If the surrounding towns also participated, all the towns would benefit even more. Programs are in place; education may make them more extensively used. If people realized that the prevalence of asthma, and mercury in the water and on the land are linked to the lack of our recycling, then more people would make the effort to minimize the burnable waste stream.

Another natural resource item that townspeople need to be aware of is a specific type of wild rose that was introduced into the Northeast in the 1950's. It was advertised as a "living hedge" and was planted on the Ridge Road in Bowdoinham in 1955. It so lived up to its advertisement that some states now forbid its planting. It is so impenetrable that a rabbit cannot pass through and if trees are available for it to climb, it will reach heights of 20 feet. It is currently present sporadically from the foot of the Ridge road in town extending northward ½ mile each side of the road for 5 miles. It is very difficult to eradicate without chemicals. Education to alert each property owners as to its identification and growth habit may slow its spreading.

Existing Controls

The Mandatory Shoreland Zoning Act-(Maine Statutes, Title 38, Section 435 through 449)

It is a State law that the Town shall regulate the land use within 250 feet of the normal high water mark of the Bay, rivers, and coastal and freshwater wetlands, and within 75 feet of certain streams. Although it is focused on the "Shorelands," the Act is potentially the most effective tool available for controlling the threats to the natural resources in Bowdoinham.

The Act and the ordinance afford protection through prohibition of some uses in a "Resource Protection Zone" and require specific performance standards for many activities within 250 feet of the water's edge, and within 75 feet of a stream.

The applicability of the shoreland-zoning ordinance is within 250 feet of the upland edge of a coastal or freshwater wetland. Freshwater wetland for this ordinance covers 10 or more contiguous acres and/or adjacent to a surface water body, such that combined surface area is 10 acres, the water body itself is not counted in these 10 acres.

This ordinance protects wetlands by requiring that areas within 250 upland feet of wetlands, rated High or Moderate Value by Fish and Wildlife be in the Resource Protection Zone.

Most of Bowdoinham's tidal shores have been mapped as high or moderate value habitat by the Maine IF&W and the US Fish and Wildlife Service. Between waterfowl, rare plants and endangered bird and fish species, most of Bowdoinham's shoreland areas and tidal waters are worthy of stringent protective measures.

Municipalities have the option of sub-districting within the Shoreland Zone. 250' upland feet of valuable wetlands and 100-year flood plains have to be designated resource Protection Zones, which is the only zone where essentially all structures are prohibited.

Besides the standard 75-foot setback in the Residential Zone, there are special standards for minimum lot size, water setback, lot frontage, campsites, roads and driveways, parking, campgrounds, signs, clearing for approved development, mineral extraction, septic systems, utility connections, agriculture, manure storage, timber harvesting, water quality, and archeological resources.

In sum, if the Town wants to be serious about protecting wildlife habitat, corridors, water quality, fisheries and open space, it must enforce the shoreland-zoning ordinance or its own zoning ordinance, which ever is more restrictive.

Maine's New Erosion Control and Stormwater Management Laws

Two new laws addressing non-point source pollution took effect July 1, 1997.

The Erosion and Sedimentation Control Law requires a person who conducts an activity involving filling, displacing or exposing earthen materials to take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource. The law emphasizes the importance of erosion control in watersheds and immediate shoreland areas, and the use of best management practices.

The Stormwater Management Law applies two different sets of standards depending whether the proposed activity is located inside or outside of the direct watershed of a water body "most at risk" from new development. We have 298 acres of the direct watershed of Richmond's Pleasant Pond, which is at risk.

The Natural Resource Protection Act (Title 38, Section 480, A through S)

This Act requires a permit from the State Department of Environmental Protection for any activities upon or immediately adjacent to wetlands greater than 10 acres, or that might affect a significant wildlife habitat. The significance is established and pre-mapped by the Department of Inland Fisheries & Wildlife

The criteria for granting a permit include:

"The activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, aquatic habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life."

Standards are issued in regulations. Mitigation is allowed to minimize, or reduce the impact by *"compensation for an impact by replacing the affected significant wildlife habitat."*

Enforcement is by DEP. The wildlife protection aspect is enforced by the Department of Inland Fisheries & Wildlife (IF&W).

The Endangered Species Act of 1975 - Title 12, Chapter 713, Subchapter V.

The Commissioner of the Department of Inland Fisheries & Wildlife may designate an essential habitat for an endangered or threatened species. Then, any activity within the area requires a permit from the Department of Inland Fisheries & Wildlife. In practice, this means that any activity which is suspected of affecting an endangered habitat should be brought to the attention of the Department of Inland Fisheries & Wildlife (they have regional offices and numbers should be available to the Code Enforcement Officer and Planning Board). This procedure must be used for the Eagle nest(s).

Endangered Plants Act - Title 5, Section 3315

The Act is on the books, but there are no regulations for its use to protect plants.

Natural Areas Program - Title 5, Section 13076

Program staff maintain information on rare, threatened and endangered plants and rare or exemplary natural communities. It has no regulatory power by itself; however, the State DEP and the local Planning Boards can use the information in development review process, and may work out management plans to assure these species and natural communities are protected.

Water Discharge Licensing

The Legislature's first step, in the late 1950's, was first to classify all water bodies (Title 38, Section 465). It then required that all direct discharges be licensed in accordance with those specifications. The tolerated amount of discharge that affect ssuch characteristics as color, taste, turbidity, toxicity,

radioactivity of the water depends on the classification.. Untreated discharges are prohibited. DEP is tightly controlling those that are still in existence requiring annual license review of any individual or institutional State licenses. The school in Bowdoinham falls under this category.

Marine Resource Programs

The Maine Department of Marine Resources has regulatory authority for the management of fish species in the tidal freshwater zone of the Kennebec River, Androscoggin River and Merrymeeting Bay. The only license for recreational fishing required is for Atlantic Salmon. This is available from the Atlantic Salmon Commission.

All striped bass fishing must be by hook and line. Due to conservation measures, season length and dates, and possession limit and/or length, may vary from year to year.

Shoreland zoning is probably the most effective tool we have available to protect the spawning areas of our anadromous fisheries.

The Department of Marine Resources is involved with a fish restoration project funded by the majority of the hydropower developers known as "Kennebec Hydro Developers Group." Such a cooperative effort was launched at the Brunswick dam in 1983. The objective of this program is to produce an annual harvest of 700,000 pounds of alewives and 350,000 pounds of American shad.

Bowdoinham Local Ordinances

Besides the Shoreland Zoning Ordinance which the Town has adopted and extended to all streams, there is also the

Flood Hazard Ordinance. Flood prone and hazard areas are delineated on the maps.

It does not prohibit structures. It requires that an engineer certify that the structure will be able to withstand the 100-year floods. For example, there are standards for floor elevations, depending on the structure and the flood proneness of the area.

Local Subdivision and Site Review. These two ordinances require the Planning Board to consider the impact of a development on the natural resources. Maps prepared by GPCOG in 1999 will make it easier for the Planning Board to protect the resources.

According to recent changes in the State Statutes, fresh water wetlands within the proposed subdivision have to be identified on maps and the Planning Board has to take into consideration the existence of wetlands in the permit review process.

The State Plumbing Code. This is a State regulation, which is locally enforced by the plumbing inspector. Since the plumbing code makes it extremely difficult to get a subsurface disposal system approved on hydric or wetland soils, this is a means of keeping inappropriate residential development from unsewered shoreland or wetland areas.

Note, however, that persistence, variances, lax enforcement and expensive treatment systems can overcome this obstacle, so it cannot and should not be exclusively relied on for protecting wildlife habitat or water quality.

Survey Results

Survey respondents seem most united on the need to protect natural resources. There is, however, not nearly the same level of agreement on the means to do that.

81% agreed that there should be restrictions beyond those required by the State to protect the quality of the drinking water.

79% agreed that there should be restrictions beyond those required by the State to protect the spawning area of anadromous fish in Merrymeeting Bay.

73% agreed that there should be restrictions beyond those required by the State to protect deer wintering areas.

76% agreed that there should be restrictions beyond those required by the State to protect duck and goose habitat.

71% agreed that there should be restrictions beyond those required by the State to protect mapped wetlands identified as significant by Federal, State or local officials.

75% agreed that there should be restrictions beyond those required by the State to prevent erosion from agriculture, forestry and road construction.

73% thought the Town should encourage the protection of open space and 76% agreed that the Town should encourage the protection of scenic views through voluntary cooperation.

65% agreed, 19.5% disagreed and 15% were neutral on reserving a district for subdivisions with variable lots to preserve wetlands or special natural areas.

Goals and Strategies

Merrymeeting Bay as an Ecological Unit

We Find That:

Merrymeeting Bay is a unique Ecosystem. The rivers, streams and associated wetlands provide the nursery, habitat and staging area for potentially 10 species of anadromous fish, Bald Eagle, migratory birds in the

North Atlantic Flyway and an extraordinary number of inconspicuous but endangered plants.

The Merrymeeting Bay Eco-system consists of all the natural resources in the watershed of the rivers and streams that flow into the Bay. Human activity anywhere in this large watershed may affect the natural resources and water quality of the entire Merrymeeting Bay.

While much can be done within Bowdoinham to plan and manage land use, we are not alone on Merrymeeting Bay - its waters recognize no borders. What Richmond puts in the Bay may influence Bowdoinham, and Brunswick may influence Woolwich and Bowdoinham. While it is difficult to tackle the problems of an entire drainage this size, the communities that border the Bay should work together knowing that what each one does directly affects the others

GOALS

1.To protect water quality, scenic vistas and wildlife habitat.

2.To maintain the water quality of the streams that flow into Merrymeeting Bay so that the quality of the bay is not degraded.

Strategies to Implement Goal 1 and 2:

- 1.The Selectman shall appoint a Conservation Commission who could annually issue a status report on the natural resources of concern
2. Identify areas of concern and make recommendations to the Selectmen for possible solutions to problems identified.
3. The Code Enforcement Officer shall enforce protection of these areas through existing laws and/or new ordinances .
4. The Selectmen, with the assistance of the Conservation Commission and in cooperation with The Friends of Merrymeeting Bay shall request that DEP review the classification of the rivers and streams that feed into Merrymeeting Bay and upgrade the classification to B, where justified.
5. The Planning Board, working with the Code Enforcement Officer shall review and update the Shoreland Zoning Ordinance and maximize its resource protection capabilities to protect the natural areas identified in this plan. These revisions can include, but not be limited to:
 - (a) Shoreland zoning should be extended to 250 feet around mapped streams, wetlands, rivers and the Bay, up to the head of tide.
 - (b) Sub-zoning in the shoreland zone should be guided by traditional land use patterns with performance standards respecting the resources.

6. Because agriculture is considered a desirable and traditional land use, best management agricultural practices, which control erosion and runoff into the Bay should be encouraged.

7. The Planning Board and The Committee with help from the Code Enforcement Officer shall work with the Town Assessors to be sure that land in easements, or in resource protection zones is assessed to reflect its conservation rather than development value.

8. The Planning Board and the Committee shall develop a list of land which can best be protected through conservation easements, and shall recommend to the Friends of Merrymeeting Bay and Land For Maine's Future that they be protected through acquisition or purchase of conservation easements.

Wetlands

We find that:

Both tidal and interior non-tidal wetlands are key and integral parts of the Merrymeeting Bay Ecosystem. They often provide the habitat, food and travel corridors for the anadromous and other fish, migratory and non-migratory birds, migrating fowl, ducks, mammalian wildlife, reptiles and amphibians.

Wetlands also serve to protect human property from flood and the water of the Bay from pollution.

Wetlands are critical to recharging the water level of both the Bowdoinham Water District's municipal drilled well located in Bowdoin, and the many private wells in Bowdoinham. If private wells are polluted, the landowners will increase the demand for extending the public water and this will then cost more money.

GOAL

3: Protect Local, State And Nationally Significant Wetlands

Strategies: For Goal 3

1. The Planning Board or Committee shall request a meeting with the Planning Board of Bowdoin to discuss means of protecting wetlands which may be in the recharge area of the Bowdoinham municipal well.
2. The Planning Board shall identify and devise means of protecting wetlands, which may be recharging wells in present and future residential areas.

3. All wetlands covered by high tide should be treated equally: The Planning Board shall assure that 250 feet from the upland edge of all tidal wetlands is in the Shoreland Resource Protection Zone.
4. Code Enforcement Officer shall present to the Planning Board a list of wetlands which are identified by Federal and State agencies as being waterfowl or wading bird habitats. They shall be also given the highest level of protection by placing 250 feet from their upland edge in Resource Protection Zone.
5. Other identified, mapped wetlands farther than 250 feet from the tidal water will be considered a Limited Residential Shoreland Zone.

Deer Yards

We find that:

There are large, contiguous areas, mostly along Denham Stream, identified as deer wintering areas in Bowdoinham.

DeerYards offer protection to deer, especially in harsh winters. They also contribute to the open space, sense of wilderness and rural character of Bowdoinham, highly valued by its citizens.

GOAL

4: To Protect Mapped Deer Wintering Areas

Strategies:

1. The Planning Board shall develop development standards for deer yards identified or mapped by State or Federal agencies
2. Designate these areas as suitable for less dense subdivisions designed to respect the deer winter habitat.
3. When reviewing subdivisions, the Planning Board should consider the impact on mapped or identified deer yards (with assistance from the Department of Inland Fisheries and Wildlife).

Lack of Information, Data And Research

We find that:

There is scant information on the current quality of the waters of the Bay and on the cause and effect relationship between human activity and fish spawning, survival and wildlife reproduction. The public needs information in order to support appropriate measures to prevent contamination

While there have been water quality monitoring programs in Casco Bay, Boothbay Harbor, Machias Bay and Penobscot Bay, there has been very little water quality testing in Merrymeeting Bay.

We also have no idea of how what we do in Bowdoinham does affects the Bay. We think people will take steps to prevent pollution if they can be shown that some activities that they undertake causes it.

GOAL :

5. To Develop and Distribute information on the Vulnerability Of The Natural Resources of The Bay .

Strategies to Implement Goal 5

1. The Selectmen and the Conservation Commission shall support appropriate efforts to conduct a sustained, scientifically valid water quality-monitoring program.
2. Seek information on the level and impact of contaminants from treatment plants or industries up river.
3. The Conservation Commission shall distribute the research results in a way that is accessible to the public.

-The end-

RECREATION

Introduction

The town has recreation facilities at the recreation complex by the elementary school at Cemetery and Ridge Roads, and at the Bowdoinham Waterfront Park at the Cathance River Landing and the Bay Road.

Inventory Of Physical Assets

The Bowdoinham Community School (BCS) was built in 1955, with additions in 1968, 1977, and 1991 /1992. It has an attached auditorium/gymnasium with a small stage. The facility has a poured rubber floor and a regulation-sized basketball court. The school is Bowdoinham's component of the four towns' SAD 75, and a representative Board of Directors controls its use. Bowdoinham has two members on the Board of 13. The School District and the Town have an agreement for access to the building for community use.

A Little League baseball field, built in 1992, is on school property.

Two additional ball fields for baseball and soccer are at the recreation complex. The Town owns the batting cage, a pitching machine, and soccer goals.

A community playground for small children was constructed behind BCS. The construction was supervised by the Bowdoinham Parent Teacher Club members and contains wood and metal play apparatus.

The outdoor regulation basketball court was built in the summer of 1993.

A regulation tennis court was built in 1993.

The outdoor ice-skating rink is situated in the parking area for the ball fields along the Ridge Road. The rink is approximately 30 feet by 100 feet and is weather dependent and maintained by volunteers. In the summer of 1999 two horseshoe pits were installed.

An outdoor volleyball court is maintained by volunteers for summer use. There is also a nature trail adjacent to the ball fields and a one-kilometer strip mowed on the fields for cross-country running and skiing.

Volunteers constructed a snack shack and storage building with water and electricity, at the athletic field on Ridge Road in 1999. Two picnic tables were purchased and an electronic scoreboard was installed at the community school for basketball season

The Town Hall has undergone extensive renovation during the past several years. It is also used for recreational activities and programs.

The State of Maine manages the Merrymeeting Bay Wildlife Area, located at the tip of Wildes Point Road. Area and State level field dog trials occur here on a regular basis, but the State discourages camping and many other activities often associated with the outdoors.

The Masons, The Knights of Pythias and The Grange all have buildings in the Village. These social clubs are a recreational asset for their members and are potentially available for community use.

Public Access

Bowdoinham has miles of frontage on the Kennebec, Cathance, and Abagadasset Rivers and Merrymeeting Bay, but it has no organized swimming areas and only limited points of access.

The Town Landing

The Town Landing is primarily a boat launch jointly owned by the Town and the Department of Conservation. It consists of a boat ramp and two docks, one for handicapped use, where the public may launch and board boats. It is located on the Cathance River, just east of the Route 24 bridge at the foot of Main Street. This public right of way was completely rebuilt with town and Department of Conservation funds and a federal grant which provided the assistance of the Navy Seabees. The Waterfront Committee supervised the renovation.

The Landing is a full-tide ramp, so that boats can be launched at any tide. There is a mean low tide of 4 feet, 8 inches at the site. The 13 and 1/2-degree ramp angle makes it easier to launch large boats at any tide.

Down river from the landing are spaces for 44 moorings, 40 for residents and four for non-residents, as required by state law. Twenty-eight are currently used. These moorings are registered with the Town and supervised by a paid Harbormaster, who reports to the Town manager.

The Bowdoinham Waterfront Park is on two acres purchased in 1992 following years of informal town use. Volunteers and the Merrymeeting Yacht Club have assisted maintenance at the Park with the town budget providing the funds for maintenance.

Facilities include picnic benches, horseshoe pits, and a fishing area. Volunteers constructed a planked stage for Waterfront Concert Series in 1999. A canoe rack and other improvements are being planned. The Department of Conservation provided \$5,500 grant for constructing a vault privy in 1998. Parking for 29 vehicles is available. Four spaces are assigned to handicapped parking. The park was landscaped in 1997 with trees, shrubs, and areas of lawn.

East-West Discontinued Roads

Bowdoinham has many East-West discontinued roads. The public right of way to these roads has often been retained when the road was discontinued. These provide public access for snow-mobiling, hiking, cross-country skiing, and horseback riding. These are not part of an established recreation program but should be identified and maintained for public uses.

Recreation Programs

The Town hired a ½ time Director of recreation in June 1999. A 9 member Recreation Committee oversees programs.

Baseball

This is the largest recreation program in the town, serving approximately 130 players through T-ball (ages 5-7), youth league (ages 8-12), Bambino (ages 9-12), Girls softball (three teams for K-16 years) and Babe Ruth League (ages 13-15). As players move beyond T-ball, they compete with teams from within the town as well as from Harpswell and Bowdoin. Babe Ruth teams "pool" and "draft" interested players from all the towns in S.A.D. #75. Senior Babe Ruth and American Legion teams are available for players 16-18 years of age.

Basketball

The season begins in November and runs through February. Third and fourth graders have 40 players. Fifth and sixth grades have 23 boys and 2 girls teams. In 1998-99 season, a K-2 program was added with 35 boys and girls participating. This program ran from November 1 through December and is a skills development program. Game schedules include teams from Harpswell and Bowdoin..

Adult basketball meets regularly one night a week during the winter months. During the warmer months games are less regular and are played on the outdoor court.

Sundays are open gym time for middle school and high school students during Feb/March. They participate in a "Travel League" at the Yarmouth Recreation Department

Soccer

A soccer clinic meets once a week for 5-6 weeks from mid-July through late August. This is an opportunity for children ages 5-12 to learn and develop skills. This summer marks the third year of this program. The program has served 28 children in each of the past two summers. During the fall soccer season, interested Bowdoinham children participate in the Topsham Recreation soccer leagues. Many children participate in other local club and camp offerings throughout the year.

Volleyball

Adult co-ed volleyball is played one night a week. This activity has a consistent and strong following (10-20 people). In winter, games are held in the school gym, while during the summer months an outdoor (grass) court is maintained.

Skiing

A downhill skiing program is offered beginning in January and running through mid-February. This program takes place at Lost Valley in Auburn and consists of six two-hour sessions (one hour of which is instruction) and a seventh half-day session. Transportation from the school to the mountain is part of this package. This program has been in existence for several years and has been attended by as many as thirty children plus a handful of adult chaperones.

A 1-km cross-country loop trail has been maintained around the athletic fields.

Tennis

Tennis instruction has been offered by R Department for the last three summers for up to 12 children participating. Informal tennis tournaments have been held. In 1999, an adult class was added.

Swimming

Lessons are available, through the Topsham and Brunswick Recreation Departments, the Bath YMCA and the Maine Event Fitness Center.

Other Programs

Currently Boy Scout, Brownie, and 4-H programs are available within the town.

Aerobics is offered at the school through the S.A.D. #75 Adult Education program. A fee is charged for this program.

The library offers a variety of reading, activity, and workshop programs throughout the year.

Privately sponsored dances (contra, etc.) are held in the Town Hall. These dances are quite regular and are open to the public for a small fee.

The Young Eagles Program to acquaint town youth with aviation is offered by personnel at the local airport on the Bay Road, approximately one mile south of the village.

The Bowdoinham Fire Department sponsors community events including Santa's visit to the Fire Station each December.

A Waterfront Concert Series is held every week for 6 weeks at the Waterfront Park during the hot summer season.

Bowdoinham has held the Second Annual Celebrate Bowdoinham Anniversary Party in September, in and around the Waterfront Park.

Analysis

Bowdoinham has many opportunities for recreation. The recreation budget for 1999 exceeded \$37,000. \$26,000 of this was raised through fees. Therefore, the recreational program is 70% self-sufficient. Volunteers lead the activities. Please see the Recreation Department budget at the end of this section.

Other recreation is available through organizations such as Scouts, the Bowdoinham Snowmobile Club, and the Merrymeeting Yacht Club, as well as the Parent Teacher Club, and local churches. While these are not town-supported activities, they do provide opportunities for free or inexpensive recreation. Again, volunteers are vital to their success.

A third type of outdoor recreation is unorganized -- hunting, fishing, walking, boating, bicycling, horseback riding, etc. in Bowdoinham. With its rural character, rivers, and Merrymeeting Bay, the town has had many opportunities for this kind of recreation. Within the last five years, many improvements have been made to town recreational facilities. The new tennis court, the renovated town hall, and the reconstruction of the boat landing and waterfront park are evidence of the town's commitment to recreation.

Goals And Strategies

We Find That

There are some unmet needs for recreation expressed by townspeople. These include:

- ◆ Improvements to the ice-skating rink, such as wooden benches.
- ◆ Summer programs for children and teens, such as beach trips and boating lessons.
- ◆ Recreation for senior citizens.
- ◆ An organized swimming program and facilities for swimming lessons.
- ◆ Safe places for walking and biking
- ◆ Off-road recreational trails available to the public.

As the town grows and land is being developed for homes, existing public access for recreation is being curtailed. The need for public access to water is also limited by the fact that only the waterfront park and the State-owned wildlife area offer any access to water.

We conclude that people do view recreation as an important aspect of the community life in Bowdoinham. There is a history of willingness to organize

and operate programs on a voluntary and fee for service basis. Since 1997 the Recreation Committee and the Selectmen have taken steps to maximize the many opportunities available for recreation.

Therefore, the Comprehensive Planning Committee proposes the following **GOALS** and strategies to implement them:

GOAL

- 1. Assure That All Ages And Sexes Have Equal Opportunities And Access To Recreation In Bowdoinham.**

Strategy

1. The Recreation Board should continue to provide equal opportunity for all citizens
- 2.

GOAL

- 2. Establish A Senior Citizen Component Of A Recreational Program In Bowdoinham.**

Strategy

2.The Recreation Committee should ask the Town's senior citizens, to outline how the Rec Board may help them, or if they have a need. Perhaps seniors could be enlisted as volunteers in recreation or school programs (that being recreation to them and helpful to the Town). Perhaps seniors, since there is a growing number of them, ought to be represented on the Recreation Board

GOAL

- 3. Expand The Recreational Trail Opportunities**

Strategies

- 3.-1 The Town should maintain all rights of way in the discontinued roads, for recreational access.
- 3-2 The Town should explore ways to establish public access to land and water recreation through purchase, conservation easements, and assisting private landowners in making informed decisions about use of their land.
- 3-3 The Town should challenge the Bowdoinham Trails Committee to work with the Recreation Committee and other interested trail-user groups to meet this goal

3-4 The Town should provide opportunities to educate trail users about their responsibilities and impact in various types of trail use.

GOAL

4. Have an Organized Swimming Program.

Strategy

The Recreation Committee should investigate a number of possibilities, including busing to State Parks and beaches, subsidizing use of Bowdoin College or Merrymeeting Health Club pool, or developing a swimming area in town.

GOAL

5.To Create A Field For Ice Skating Which Holds The Water And Is Flooded And Maintained In An Inviting And Safe Condition.

Strategy

The Recreation Committee should enlist the help of a volunteer who would bank the field and seek the help of experts on the technique to establish the field. The Recreation Committee could also seek an agreement with the Fire Department to flood it and maintain the ice.

GOAL

6.To Establish a Summer Program for Preschool through teenage Children.

Strategy

The Recreation Committee should investigate the use of a part-time Recreation Director to operate an appropriate summer program. This program could utilize the facilities and programs of Bowdoin College, neighboring towns and State Parks. It could be funded by a combination of fees and donations.

GOAL

7 Encourage The Use Of The Wildlife Area For Town Recreation.

Strategy

The Town should develop a closer relationship with the Department of Inland Fish and Wildlife in order to understand the current and potential opportunities for recreation in the area.

GOAL

8. Explore Possible New Recreation Programs Other Than Athletic Programs

Strategy

The Recreation Committee and Community Activities Coordinator should:

1. Inventory the various activities sponsored by the local groups and churches.
2. Develop seasonal activity plans other than the Athletic Program
3. Supervise the Athletic Program and maintain all scheduling for volunteer coaches as well as their certifications.
4. Continue to maintain relationships with area Recreation Directors for inclusion in area events.
5. Develop a Bowdoinham Anniversary Party each September.

RECREATION BUDGET

	ADOPTED FY 1998/1999	PROPOSED FY1999/2000	INCREASE (DECREASE)
Personal Services	1,000	9,360	8,360
Summer Program	0	3,880	3,880
FICA match		1,013	1,013
Total Personal Services	1000	14,253	13,253
<u>Athletic Program</u>			
Tennis	200	0*	(200)
Soccer	300	0*	(300)
Down Hill Skiing	1600	1600	0
Baseball	600	0*	(600)
Basketball	300	150	(150)
Field Hockey	200	0*	(200)
Volley Ball	100	0*	(100)
Instructor Fees	0	1,020	1,020
Athletic equipment	2000	4,250	2,250
Athletic Uniform	2,000	2,000	0
Total Athletic Prgr	7,300	9,020	1,720
<u>Activities Program</u>			
Summer Program	800	0*	(800)
Birthday Celebration	0	1,900	1,900
Winter program	800	400	(400)
Arts&Crafts Instructor	1900	300	(1600)
Concert Series	0	1,200	1,200
Supplies and Decorations	500	700	200
Total Activities	4,000	4,500	
<u>Operating Expenses</u>			
Dues, Fees	500	400	(100)
Insurance	900	600	(300)
Scholarships	500	400	(100)
Food Service	4,500	6,500	2,000
Reward and Recognition	600	900	100
Transportation	800	900	100
Supplies Expense	300	300	0
Total Operating Expense	8,100	9,600	1,500
<u>Revenue:</u>			
Fund Raising	2,500	8,600	6,100
Food Service	6,800	4,500	2,000
Registration(fee)	7,700	12,100	4,400
Birthday Celebration		1500	1,500
Sponsorships	1500	1,700	7,500
TOTAL REVENUE	18,500	26,000	7,500

* Programs still continue but Director's presence eliminates this expense

PUBLIC SERVICES AND FACILITIES

Introduction

An assessment of the current and future capacities of public facilities and services is an important element in the Comprehensive Plan. The infrastructure of the community provides the backbone for economic development and the services the town provides its residents. This section will include a discussion on three aspects of the infrastructure of the Town: the structure and function of town government; public facilities and properties; and public services not otherwise covered in other elements of this plan.

Structure and Function of Town Government

Form of Government

The Town of Bowdoinham was incorporated as the 14th Town in the District of Maine by the Commonwealth of Massachusetts on September 18, 1762.

The municipal corporation is a political subdivision of the State of Maine.

This political subdivision will henceforth be referred to as it is in Maine Revised Statutes, "municipality" or "town".

Bowdoinham is governed by the Town Manager Plan" as defined in Maine Statutes, Title 30 §2631:

"The government (under this plan)... shall consist of a town meeting, an elected board of selectmen, an elected school committee, an appointed town manager and any other officials and employees that may be appointed under this subchapter, general law or ordinance. Other town officials may be elected by ballot, including, but not limited to, moderator, assessors, overseers of the poor, clerk and treasurer".

Board of Selectmen

In Bowdoinham the only elected body is the Board of Selectmen. They also serve (and are therefore elected as) the Board of Assessors and the Overseers of the Poor. The registered voters elect them for staggered terms of three years.

Assessor- the Board of Selectmen have delegated the authority for assessments through a contract with a professional assessor. He is available to the public at the Town office the last Wednesday of each month.

Overseer of the Poor The Selectmen have delegated this authority to the Town Manager. who also serves as the General Assistance Administrator

Assistance to the poor according to General Assistance Ordinance developed and approved by the Department of Human Services and the Maine Municipal Association. This ordinance assures that all members of the public qualifying for assistance shall receive it in a fair and judicious manner.

Municipal Officials Appointed by the Selectmen

Under the Town Manager Plan, the Selectmen may choose to appoint all town officials.

Bowdoinham has chosen to grant authority to the Selectmen to appoint the Treasurer, Tax Collector, and Town Clerk. These officials, who may be elected in other towns, have statutory responsibilities, but they are still accountable to the Town Manager, unless otherwise assigned by charter or ordinance. The Selectmen may remove these officials for cause, after notice and hearing (30 MRSA § 2601)

The Town Manager

The Board of Selectmen currently appoint the Town Manager. Because it is such an important administrative position the powers and duties of town manager are quoted in full from Maine Statutes(30A MRSA§2636).

*"1. **Executive and administrative officer.** Is the chief executive and administrative official of the town;*

*2. **Administer offices.** Is responsible to the selectmen for the administration of all departments and offices over which the selectmen have control;*

*3. **Execute laws and ordinances.** Shall execute all laws and ordinances of the town;*

*4. **Appoint department heads.** Shall serve in any office as the head of any department under the control of the selectmen when directed by the selectmen;*

*6. **Appoint town officials.** Unless otherwise provided by town ordinance, shall appoint, supervise and control all town officials whom the municipal officers are required by law to appoint, except members of boards, commissions, committees and single assessors; and appoint, supervise and control all other officials, subordinates and assistants, except that the town manager may delegate this authority to a department head and report all appointments to the board of selectmen.*

*7. **Purchasing agent** Shall act as purchasing agent for all departments, except the school department, provided that the town or the selectmen may require that all purchases greater than a designated amount must be submitted to sealed bid;*

*8. **Attend meetings of selectmen.** Shall attend all meetings of the board of selectmen, and the town manager may attend meetings when the manager's removal is being considered.*

*9. **Make recommendations.** Shall make recommendations to the board of selectmen for the more efficient operation of the town;*

*10, **Attend town meetings.** Shall attend all town meetings and hearings;*

11. **Inform of financial condition.** *Shall keep the board of selectmen and the residents of the town Informed as to the town's financial condition;*

12. **Collect data.** *Shall collect data necessary to prepare the budget;*

13. **Assist residents.** *Shall assist, insofar as possible, residents and taxpayers in discovering their lawful remedies in cases Involving complaints of unfair vendor, administrative and governmental practices; and*

14. **Remove appointments.** *Has exclusive authority to remove for cause, after notice and hearing, all persons whom the manager Is authorized to appoint and report all removals to the board of selectmen."*

The Treasurer

The Selectmen appoint the Treasurer, traditionally, the Town Manager. The Treasurer shall disburse money only on the authority of a warrant affirmatively voted by the majority of the Selectmen, with the exception of routine payroll which can be authorized by written policy, on file with the Town Clerk.

The Treasurer shall keep all financial accounts which shall be examined by the municipal officers every 3 months.

The Treasurer appoints a Deputy and Assistant to assure continued coverage.

Tax Collector

Traditionally the Town Manager has been appointed as Tax Collector. The office is responsible for the collection of all excises, real estate, and personal property taxes.

There is an Honesty Bond on all Town employees.

Municipal Clerk

Pursuant to state law the office of the Town Clerk is responsible for maintaining the official records of the Town.; :the supervision of state and municipal elections; the recording of vital statistics (birth, death, and marriage); and the issuing of all permits and licenses as required by state law. The Town Clerk appoints a Deputy and an Assistant to assure there are no lapses of coverage..

Appointed Municipal Staff

The Selectmen also appoint administrative positions as recommended by the town manager.

Assessors Agent:

The Board of Assessors has a contractual relationship with a professional Assessor who provides complete assessing services for the town. Since he has office hours twice a month, an Assessing Clerk is at the office 12 hours per week. This is a part time paid position.

Code Enforcement Officer.

This position, which includes Building Inspector and Local Plumbing Inspector (LPI), is annually appointed by the selectmen. According to a new law passed in 1993, code enforcement officers are now required to be trained and certified. His hours have been expanded from three to twenty per week. This is also a paid position.

Administrative Assistant-

The Town Manager appoints a full time assistant, who also serves as the Town Clerk, Deputy Tax Collector, Deputy Treasurer, Secretary to the Planning Board and Registrar of Voters.

Registrar of Voters:

This is an annual appointment, which receives no specific salary or stipend. The duties and responsibilities of the Registrar are incorporated into the job description of the Administrative Assistant.

Road Commissioner

The Town Manager is appointed Road Commissioner. This position is required by State statute and serves as the department head for the Public Works Department. This position receives no separate compensation.

Recreation Director:

This part time position was created in 1998 when the Selectmen discovered, through accounting changes, that the recreation program in Bowdoinham was approaching \$20,000 per year and they felt it necessary to have a program supervisor

Solid Waste and Recycling Director:

This position is for 14 hours per week and is paid an hourly rate. The Solid Waste and Recycling Director is responsible for the supervision of two part time and one full time employees.

Appointed Stipend Positions

The Board of Selectmen also has authority to appoint positions which receive an annual stipend. The Selectmen have adopted a policy to assure fair and equitable treatment of these stipend positions.

Animal Control Officer:

This is an annual appointment required by state law. In addition to an annual stipend the ACO is also paid mileage for the use of a privately owned vehicle used in the execution of the duties and responsibilities of the position as required by state law.

Health Officer:

This appointment is required by state law and until 1997 was filled by the Town Manager. At that time, the Town Manager requested the Selectmen appoint a person with health care training. It is now a stipend position currently filled by a resident with a nursing degree.

Harbor Master:

This is an annual appointment by the Selectmen upon the recommendation of the Waterfront Committee. This position, authorized by State law, requires certification and receives an annual stipend. The position has the authority to manage the harbor on the Cathance River according to Rules & Regulations for Harbor Management as adopted by the Board of Selectmen.

Fire Chief.

Because the Town of Bowdoinham does not have a municipal fire department created by local ordinance, state law requires the appointment of the Fire Chief to be indefinite. This position receives an annual stipend..

Constable

In 1998 and in cooperation with the Sagadahoc Sheriff's Department the Selectmen appointed two Constables for the enforcement of municipal ordinances.

Cemetery Sexton

In a position created in 1999, the Sexton supervises the maintenance and care of the 48 cemeteries in town.

Quasi-Judicial or Municipal Boards

State Law requires the establishments of a Planning Board and the Board of Appeals. Since some of the decisions are similar to judicial and they have to follow adjudicator procedures, they are referred to as Quasi (somewhat) Judicial.

Planning Board:

The Town appoints 5 members and 2 alternates for staggered 5 year terms. This board is governed by bylaws approved and adopted by the Selectmen. Land Use Ordinances adopted by the Town at Town meeting govern decisions on permits. The members of the Planning Board are volunteers and do not receive an annual stipend.

Board of Appeals

A Board of Appeals may, but is not required, to be established. Because it functions as a judicial body, decisions from which are appealed to the Superior Court, the procedures and criteria for decision making are prescribed by State Statute, Title 30A §2691.

The Board of Appeals in Bowdoinham was formally established at Town meeting in June 1998. An ordinance was adopted and all actions since its de-facto operation since the 60's were ratified retroactively. The five members and two alternate members of the Board of Appeals do not receive an annual stipend and serve five year staggered terms.

(Note: The expenses for the Planning Board and the Board of Appeals are provided for in the Administrative Budget.)

The Bowdoinham Water District-

The Water District was established by Private and Special Laws of the Legislature. The Selectmen appoints the 5 member Board of Trustees. They oversee the operation of the Municipal Water System. They are not remunerated for their services.

Committee Appointments –

The Board of Selectmen has authority to create committees as it sees fit. The Selectmen have appointed the following committees.

Finance Committee:

The "Budget Committee" was a hold over from the days of Selectmen/Town Meeting form of Government. It was not until 1998 that the Selectmen adopted a policy which established a five-member committee and qualifications for service. The Committee members serve as advisors to the Board of Selectmen and the Treasurer.

Trails Committee:

This is a five-member committee whose mission is to develop bike paths, horse trails, wilderness trails and sidewalks within the community.

Waterfront Committee:

This five-member committee supervises operation of the Waterfront Park, develops an annual budget, and in conjunction with the Town Manager supervises the performance of the HarborMaster

Recreation Committee:

This nine-member committee develops and implements athletic and entertainment programs and community events.

Solid Waste Committee:

This five-member committee develops solid waste ordinances and policies that they recommend to the Selectmen for adoption. This committee works in conjunction with the Solid Waste and Recycling Director.

Comprehensive Planning Committee:

This nine-member committee is charged with updating the Comprehensive Plan, adopted by the town in the 1970's. It has guided the work of a Consultant and the Greater Portland Council of Governments, which worked with the Town from '97-99.

Town Hall Preservation Committee:

This five member committee is charged with the care of the Town Hall and is actively involved with its renovation plans.. They have successfully applied for and received a CDBG grant for significant improvements.

Please see the Organization Chart on next page

Municipal Property and Structures

John Coombs Building Town Offices

The Town's administrative offices are located in the Coombs Building at 13 School Street. The building is a three-story, wood-framed converted school building, built in 1912. The Town purchased the building from SAD 75 in 1989 for \$1.00. In 1998 that the first floor was extensively renovated to facilitate efficiency in providing services .



The first floor has offices for the Town Manager, Treasurer, Tax Collector, Town Clerk, and Registrar of Voters, Assessors Agent, Recreation Director, and Code Enforcement. It also has a small conference room and kitchen and one coed restroom, which is handicap accessible. It also accommodates a one room "Sheriff's Station" which Sagadahoc County has equipped with a computer and telephone

for the Sheriff's Department.

The second floor has been made handicap accessible by the installation of a ramp to the back door of the Selectmen's Meeting Room. It has 2 conference/committee meeting rooms, and two rooms permanently occupied by the Bowdoinham Public Library. In 1998 the library received a \$16,000 grant for renovations and now has a handicap accessible bathroom on the second floor.

Since the third floor is not handicap accessible, it is used primarily for storage for the town, the recreation program equipment and the library.

The septic system updated in 1950's is located at the bottom of School Street on a lot owned by the town. The size and condition are not known but the system has not failed. Since it has not been burdened with the use of 1 00+ students per day for the last decade it seems reasonable to assume it will not need replacement in the near future. However, a replacement system has been designed and is on file with the Sagadahoc Registry of Deeds.

Areas of Deficiency:

Parking Lot - The Coombs School lot cannot completely accommodate parking during heavy use events. When the Town Hall is hosting an election and the administrative offices and the Library are open for business there is an overflow of traffic.

Town Hall

The Town Hall is located adjacent to the Coombs Building. The steeple and front foundation was extensively renovated in 1996 and 1997 at a cost of \$40,000. In 1998, the hard wood floor was refinished. The CDBG grant for \$55,000 will be used to install a restroom and move the primary entrance so people don't have to step out into traffic and to make the building handicapped accessible.

All governmental functions will take place in this building - elections, town meetings, and public hearings; therefore, the town must remove all of the architectural barriers that keep the building non-compliant with ADA regulations.



New Fire Station Post Road



The new fire station is located on a 4-acre corner lot on Post Road and Center Street. It was constructed in 1998 for a cost of \$363,000 for which the voters approved a ten-year general obligation bond.

It provides four bays for fire equipment - three to the front of the building and

one to the rear.

There are two offices for the Fire Chief and administrative needs of the fire department. It has many modern conveniences for the fire staff including a decontamination shower, heated floors, a radio/communications room and much more.

The building provides a large community room complete with kitchen and handicap accessible rest room. A folding partition makes it possible to divide the large space into two rooms.

A Use Policy has been developed and adopted by the Selectmen for the public use of the community room and the adjoining kitchen. The remainder of the building is used exclusively for fire emergency services.

Fire Station Main Street

This structure was built in the 1950's and served a growing department well until the new station was built in 1998. This building has two garage bay doors, a meeting room with adjoining kitchen, rest room, and one office.

The Selectmen have not yet decided what the future use of this building will be. It has been discussed as a possible Recreation Facility or storage for the Fire Department and/or Public Works.



Areas of Deficiency:

Lot Size and Access - The lot is too small to be used for operations of a department requiring large equipment. The natural topography of the land makes it impossible to develop it much beyond what it is now. The driveway is on a hill in the center of the village on Route 125.

Building Materials – because of its metal construction, it does not accept paint well. It has a gray unkempt look, and is not a visual asset in the center of the Village.

Public Works Garage

This building is located on the bank of the Cathance River and was part of the Central Chemical Company complex until 1998 when the town purchased the 20-acre parcel for \$120,000. Approximately four acres of the original 20 acres have been dedicated to the exclusive use of the Public Works Department.



It is metal construction with a small office for the Public Works Foreman, two bays for accommodating Public Works equipment and a workshop area on the east end of the building.

Recreation Field –

The recreation field is located on the Ridge Road behind the Bowdoinham Community School. It was developed into two ball fields, a tennis court and a basketball court in the late 1980's. The court is owned jointly with SAD 75 which pays for half of its maintenance.

A New "Snack Shack" and storage facility was constructed by community volunteers under the guidance of the Recreation Committee in 1999. It is



complete with hot and cold running water and electricity.

Waterfront Park and Harbor

The reconstruction of the Cathance Landing Waterfront Park is a monument to public private cooperation. The Town and the Department of Conservation of the State had purchased the waterfront property east of Route 24 for



development of a boat launch. In 1997 the town, the Bureau of Conservation, the Seabees, and the National Guard Reserve partnered up with funds and the launching facility received a \$200,000 renovation.

The harbor was organized to accommodate 40 moorings, docks were installed, the lot was completely re-landscaped, and a portion of the parking lot was paved.

In 1998, Bowdoinham built a vault privy on the property, using a \$5500 Department of Conservation grant.



River View House- Antique Shop Now

This single-story wood frame building is located on the bank of the Cathance River and was part of the Central Chemical Company complex until the Town purchased the property in 1998. The building consists of four offices and a small restroom, which is not handicapped accessible.

Areas of Deficiency:

This building is only 984 square feet - so it is very small. The size will limit its usefulness as rental property. Also, the cellar is wet and a sump pump must be maintained for the integrity of the building.

The site of the **Sagadahoc Mill Property**

This building was located on the bank of the Cathance River and was part of the Central Chemical Company complex until the town purchased it in 1998. The building was cavernous - 52,000 square feet. It was in very poor condition and has since been demolished. The lot is 20 acres

Back Hill Storage Building –



This building is located on Back Hill on a 50' x 50' lot. It is of brick construction and is used exclusively for storage of the Historical Society's artifacts of Bowdoinham.

Landfill –

The old landfill, located on the Carding Machine Road was closed in 1992. The Town is required to mow it twice a year to keep the "cap" from being breached by trees and bushes.

Cannon, Town Commons –

This area located in the center of the village is a small lot bounded by Route 24 (River Road), and Main Street. It is a commemorative park with a Civil War cannon, a 1908 granite watering trough and a flagpole.

Cemeteries and Commemorative Lots Held in Trust –

During the past two centuries various groups and individuals have left the town designated trust funds for the care and maintenance of a cemetery or a commemorative lot. There are 48 cemeteries in town. The newly appointed Sexton will supervise their maintenance.

PUBLIC SERVICES

The administrative offices for the Town of Bowdoinham are located in the Coombs Building at 13 School Street. The facility and available staff are adequate for the current population. There are only three areas, which show strain and will require expansion to meet the public need for services, Recycling, Code Enforcement Officer, and Public Works.

Administrative Services

Tax Collection

The Tax Collector is responsible for the collection of excise taxes on boats, airplanes, and motor vehicles as well as for the collection of taxes on real and personal property.

Treasurer' Office

The Treasurer's office is responsible for recording all receipts from the Tax Collector and Town Clerk as well as the recording of all accounts payable and payroll.

Town Clerk

The Town Clerk is responsible for the issuance of all State licenses including hunting and fishing, dog, marriage and burial licenses. The Town Clerk is also responsible for the recording of all vital statistics of the community such as birth and death records.

Code Administration

The Town employs a state certified Code Enforcement Officer and Local Plumbing Inspector. He works 20 hours a week, and is available at the office, including 6-8, one evening a week to consult with builders, developers and homeowners, to interpret state environmental laws and local ordinances. He inspects and enforces permits and licenses. He is also a liaison with the Planning Board and the Board of Appeals.

Assessing Services

The town contracts with an assessing professional to provide tax assessment services on all real and personal property in Bowdoinham. This office is supported with an assessing secretary.

Departments

Public Works Department

Supervisor: Road Commissioner - The Public Works staff consists of one full time and one part time laborer. Supervisor is the Road Commissioner, which in Bowdoinham is the Town Manager. Given that this department is responsible for the maintenance of all town facilities (with exception of Post Road Fire Station), 46 miles of roadway and 92 miles of drainage system, it is obvious that this department is seriously understaffed.

Solid Waste and Recycling Department

Bowdoinham's Recycling Program is housed in a converted chicken barn The town has a three-year contract for the exclusive use of the front portion of the building.

The "Recycling Barn" is open to the public on Thursdays and Saturdays from 8:00 a.m. to 4:00 p.m. and is staffed by one full time employee, a part -time director and one part time laborer.

A hauling contractor under a three-year contract picks up household trash and recycling material at curbside. The contractor drops the recyclable material at the Recycling Barn and takes the bulky waste to Mid-Maine Waste Action Corporation in Auburn for a contracted tipping fee of \$50.00 per ton(1998).

There is also a pay per bag program @ \$2.00 per bag. Residents may pick up their tags at the Country Store or the Town Office. This was a \$42,000 revenue source in 1998.

Recreation Department

During the spring of 1998 there was a resurgence of interest in the recreation program for the town. As discussion progressed, the Selectmen believed it more appropriate to have a Recreation Department rather than expect a fundraising committee to be 100% responsible for the program. In July 1998 the Selectmen created a 20 hr per week Recreation Director position.

Harbor and Waterfront Department

With the Town's recent purchase of 1,300 feet of waterfront along the Cathance River, the responsibility to manage the waterfront has expanded to require the appointment of a Harbor Master. Currently the Harbor Master receives a modest stipend.

Fire Department

The Fire Chief who is appointed for an indefinite term by the Selectmen currently supervises the Fire Service.

Police Services

The Bowdoinham Police Department was disbanded in the early 1990's. Since that time, the Sagadahoc Sheriff s Department has provided police coverage for the community. In 1998, the Selectmen appointed two individuals who are also Sagadahoc Sheriff's deputies as Constables who enforce municipal ordinances.

Public Sewer and Water

The Town of Bowdoinham has no public sewer system; however the Bowdoinham Water District provides public water to most of the Village The Selectmen appoint the trustees to the Water District but otherwise have no voice in the administration of the entity. For further discussion, please see Public Water Supply Element of this Plan

Education –

The Town of Bowdoinham is a member community of School Administrative District 75. Other member communities are Harpswell, Topsham and Bowdoin. The voters of Bowdoinham elect two School Directors to represent them on the Board of Directors for District 75. For further discussion, please see the School Element of this Plan

The Bowdoinham Community School, Grades K-6, is located on Cemetery Road in Bowdoinham and provides a location for cultural and community events. The local elementary school will serve K-5 beginning in September, 2001, when 6th grades will attend the new middle school in Topsham. Middle school students- grades 7 and 8 until 9/01 currently attend classes in the former Brunswick High School.

Until 1998 access to the gymnasium and athletic facilities was severely limited but a new agreement allows the Recreation Committee access for after school and weekend athletic programs for youth. Secondary School students attend Mt. Ararat High School in Topsham.

Public Library

The Bowdoinham Public Library is located on the second floor of the Coombs Building. The Library is only partially supported with an annual appropriation in the municipal budget. The Friends' of the Bowdoinham Public Library raise funds throughout the year with plant sales and book sales for the remainder of dollars necessary to operate the library.

Health Care and Ambulance Service

There is no health care facility in Bowdoinham. Bowdoinham is served by Richmond Health Center, two hospitals in Brunswick - Parkview or Mid-Coast. Ambulance services are, in 1998, provided by an annual contractual agreement between the Town of Bowdoinham and County Ambulance.

Goals and Strategies

Physical Properties

We Find That:

1. The parking lot does not accommodate peak traffic especially when both the Coombs School and the Town Hall are being used.
2. The Old Fire Station on Main Street is underutilized. The size and topography of the lot limit its use and its appearance does not make it an asset in the center of the village.

Goals-

The Goal Is To Address The Problems Of The Parking Lot, Handicapped Accessibility To The Entire Coombs School Building and the Best Use For The Old Fire Station And The Office Building On The Mill Site.

Strategies

The Selectmen should request a short-term study to present options for the use and cost of a facelift of the Fire Station. Using this information, the Selectmen should make a decision by Town Meeting next year on the disposition of the building.

RE: DEPARTMENTS

We Find that:

- 1- The Public Works Department is responsible for maintaining nearly 46 miles of road and 92 miles of drainage. The present staff of 1-½ persons is inadequate for the job. To efficiently and effectively meet its mission, this department should be staffed with two full-time and one part time employee..
- 2- The Recycle Department of Bowdoinham has been a pioneer and a model for other towns. In 1998, Bowdoinham recycled 64% of the municipal solid waste. That is certainly among the highest rate of recycling in the State.

It has been difficult to attract and keep a person in this position full time. We suspect that the wage scale and benefits are not competitive.

GOALS

- 1. To have optimally functioning, accountable and efficient public works and recycling departments.**
- 2. To upgrade the fire protection service into a department of town government.**

Strategy

1. Create a full time position in the Public Works Department
2. Assess wages and benefits for the recycling Department employee(s).

SCHOOL FACILITIES

Inventory

Bowdoinham Community School

Bowdoinham Community School (BCS) is a unique demonstration of extraordinary community spirit. Volunteers in the town built it in 1955 to State standards. Local wood lots were used for lumber and other materials were purchased from the proceeds of the traditional 4th of July barbecue held on the site since 1954. The school has served as a focal point of community life, providing a space for meetings, recreation, and social gatherings. Additions to BCS were made in 1966, 1979 and in 1992. The 1979 addition enabled the town to close the Coombs School that had been built in 1911.

A part of the SAD #75 since 1969, BCS is located on 14.3 acres of land owned by the District on Cemetery and Ridge Roads on land adjacent to the Town's recreation fields. In 1974 a Jr.-Sr. High School was completed in Topsham for all 7-12th graders which alleviated overcrowding problems at BCS. An addition of a new classroom wing on the east end of the school and renovations to the rest of the building were completed in the fall of 1992 at a cost of \$1.2 million. Kindergarten through grade six are now taught in 14 classrooms. In the fall of 2001 the Community School will serve K-5.

The original building now houses the library, computer lab, administrative offices, one kindergarten classroom, an art instruction room, and music rooms (choral and instrumental). The current building is designed to meet the needs of 330-350 students. Current enrollment is approximately 300 students. As space needs increase, a second story can be added to the east wing. There are parking spaces on site and additional parking spaces in a gravel parking lot next to the ball fields.

The Bowdoinham Water District currently serves the school. Because there is no Town sewer system, the School District has been granted a conditional license by the Department of Environmental Protection to operate an overboard discharge system. The license is for a flow of 3,500 gpd. Since the water flows are currently around 2,500 gpd, there is ample capacity for expansion.

Middle School and High School

Bowdoinham sends its 7th and 8th graders to Middle School, which had been located in the High School. It is currently located the former Brunswick High School under a five-year lease agreement. SAD 75 is in the process of constructing a new Middle School at the former Navy Complex in Topsham. It will serve 6th-8th grades. 9th through 12th grade are in Mt. Ararat School in Topsham.

Analysis-Planning Issues

Predicting/Projecting Enrollment

Numerous studies and comparisons of predictions to actual enrollment show that predicting enrollment in schools and the class sizes seems to be nearly an impossible task. The main question, of course, is when the capacity will be reached.

Several factors are influencing growth in Bowdoinham, including its midway location between Augusta and Portland on 1-95, its proximity to Bath and Brunswick and its reputation as a family oriented community with good schools, making it attractive for new housing and families with school-aged children.

While the District should monitor first year enrollments the pre-school population, the Bowdoinham Community School and its capacity is not high on the priority of SAD 75

Class Size

Sometimes it is the fluctuation in class size, rather than the absolute totals that raise havoc with school planners. The concern is that in spite of the expansion the inability to predict enrollment sizes and the lack of funds will result either in higher than ideal student teacher ratio or in the use of the multi-purpose art or music rooms to accommodate the overflow.

Impact of Housing Development

The planning issue is whether the school could accommodate a sudden influx from a development that is likely to produce school-age children. Previous attempts at predicting enrollment with housing starts have not been successful. As such, planning for how to accommodate residential development to existing facilities like the school will be important. Including the sixth graders in the new Middle School will alleviate short-term capacity problems in the Bowdoinham Community School should they arise.

Survey Results

Two questions in the 1992 survey elicited such a strong reaction that it is unlikely the opinion has changed in the intervening years

72% of respondents were satisfied with the programs at the community (elementary) school.

83% disagreed with "equalize class size by bussing overflow to Bowdoin, or Topsham."..

Goals and Strategies

Goals

- 1. Continue to educate all of our elementary students in the community.**
- 2. Improve the planning capability to accommodate additional students without sacrificing the quality of the children's learning environment.**
- 3. Expand the community's use of the school and its facilities for education and recreation.**

Strategies

1. Schedule regular meetings between Town, School principal and Bowdoinham's representatives of the SAD board to discuss use of school
2. The Selectmen shall establish a Community School facility Committee whose responsibility will be to gather information from the State Departments of Education, Human Services office of Vital Statistics and the local Code Enforcement Officer on enrollment, population estimates and building activity
3. The Committee shall prepare a report annually on its assessment of the capacity and class sizes in the Community School. This report shall be submitted to the SAD 75 and be published in the Annual Town Report.
4. The Planning Board and the Comprehensive Planning Committee should consider the impact of residential development on district schools. Measures could include but not be limited to, assessing impact fees for development or enacting a Growth-Cap Ordinance.
5. .Consider more lighted off-street parking to increase safety and access to the school facilities.
6. Encourage expansion of adult educational opportunities at the Community School including access to the library and computer lab.

WATER SUPPLY

Inventory

Public Water

The original system was constructed for the Bowdoinham Water District in 1959. It consists of a well and pump station located on a 9-acre parcel of land owned by the District adjacent to the West McIver Road on Lot 89 in Bowdoin, east of Route 201 and north of the junction of Route 201 and Route 138. A new pump station and treatment facility was completed in January 1999, which replaced the original pump house constructed in 1959. The 8-inch by 12-inch gravel packed well is 31 feet deep in an abandoned gravel pit. The last pump tests on the well were in 1986. At that time, no significant draw down on the water table was observed when it was pumped at 91 gallons per minute or 131,000 gallons per day.

System Storage

There are two 125,000 gallon welded steel standpipes located on Preble Road, east of I-95. The combined tanks give the District a maximum capacity of 250,000 gallons. The stipulation of leaving 40 feet of water in the tanks, which is the amount needed to maintain proper water pressure, leaves an effective storage volume of 175,000 gallons.

Water Quality

There have been no water quality problems. The water is disinfected through a hypochlorite feed system. Samples for bacteriological testing are submitted once a month and are negative. Annual tests for a whole range of chemicals all were found below the maximum contaminant levels in 1996. The samples for these tests were all taken at the well site. At the source there appeared to be no problems. However, due to the pH level of the water, there was a problem with copper leaching from domestic water lines. In January 1999, the District completed the construction of a new pump station that alleviated this problem through aeration.

Water Demand

There are currently 247 service connections to 311 units, serving an estimated population of 700 in Bowdoinham and 145 in Bowdoin. It extends to the village, Pleasant Street, Main Street, a portion of Millay Road, Post Road, Bay Road to the airport, River Road through one mile north on Brown Point and about ½ mile down Brown's Point Road.

With the completion of the new pump station in January 1999, the District can now obtain accurate information about water usage in the District. The average demand for three quarters in 1999 was 56,959 gallons per day. Assuming population of 850 people served, the water use is 67

gallons per day per person, which is fairly close to the average of 60 gpd observed in other communities.

Fire Protection:

There are 48 fire hydrants connected to the system - 42 in Bowdoinham and 6 in Bowdoin. Wright-Pierce conclude that "The existing storage is adequate to support current average system demands, but is not sufficient to meet the higher fire flows recommended for commercial districts." The adequacy of delivery pressure for fire purposes was evaluated by use of a model. The desirable flow for residential structures is 750 gallons per minute (gpm). This requirement is met everywhere except at the main on Route 138 which extends to the trailer park in Bowdoin. Most of the hydrants with substandard pressure are located along Route 138 in Bowdoin. The desired flow for closely spaced commercial structures is 3,000 to 3,500 gpm. This exceeds the estimated 2,000 gallons per minute flow.

Organizational Structures:

The District was chartered in 1957 to provide water to Bowdoinham. The charter was amended in 1961 to allow service to any adjacent town. A five member Board of Trustees manage the District. The Selectmen of Bowdoinham appoint all Trustees. The District's Charter requires that a majority of the Board of Trustees be residents of the Town of Bowdoinham.

The District's Superintendent, who is employed on a part-time basis, oversees operation and maintenance of the District. Billing, accounting, and office services are provided through a contractual arrangement with the Richmond Utilities District.

Private Water Supply

Approximately two-thirds of the population and residential units are on private wells. There is only sporadic and rather unreliable data on them. Since there are few significant sand and gravel aquifers in Bowdoinham, most of the wells must draw from bedrock recharged wells. The only regulation of well placement is in the Plumbing Code that wells and septic systems must be 100 feet apart.

Analysis

The following are issues of concern:

Is The Capacity Of The Public Well Adequate To Meet The Current / Future Needs?

"The rate at which water is being withdrawn from the current supply aquifer appears to be greater than the rate of natural recharge."

This statement, made by Wright-Pierce in their 1992 study, certainly is a cause for concern. It is not the first time this statement has been made. The 1973 Wright-Pierce study expressed concern about the sustained yield of the well and recommended metering and that the system be studied every five years to monitor the capacity of the well.

Up to now the data to answer the question, whether the well is adequate has been lacking. With the completion of the new pump station in January 1999, the District can now obtain accurate information about water usage. The District intends to use this data to update the 1992 report by December of 2000.

Wright-Pierce also recommends hydrogeologic pump tests to determine the exact capacity of the McIver well. The District intends to complete these studies by December 2000, in order to assess long-term capacity needs of the District.

The District's search for additional groundwater sources has been unsuccessful. While the Trustees believe a second water source is in the long term best interest of the District for many reasons, the District has put the search for additional sources on hold until the long term needs of the District can be better assessed.

The 1992 Wright-Pierce study implies not only diminution of the well's supply, but also uncertainty about where the well is getting its water. That is, the well's recharge area is not known.

Tom Weddle, the State Hydrologist, upon review of the surface geology map and a field trip in November 1991 found it hard to believe that a simple sand and gravel aquifer would yield what the McIver well seems to be pumping.

He suspects that there are more underground sources feeding the well. This means that the recharge area is likely to be larger than the immediate sand and gravel in the vicinity.

Both the Growth Management Act and the Federal Safe Drinking Water Act amendments require that the District take steps to protect the water supply. While having a Wellhead Protection Program will not be mandated, there are

strong incentives for having an acceptable Wellhead Protection Program. Delineation of the boundaries of the recharge area will be the first step in that program.

The District and the Towns of Bowdoin and Bowdoinham will need to develop a Management Program to control the development of the recharge area. The tools will range from voluntary agreements with landowners to participation and review of development of Wellhead Protection Ordinances. Whatever the technique, it will have to be specific and targeted to the recharge area.

The surest way of control is direct ownership of the land in the recharge area. In an effort to expand the amount of the possible recharge area under the District's direct control, the District purchased a 20-acre parcel adjacent to the well site that the Town of Bowdoin had acquired for taxes. The best scenario, which will certainly help with other problems listed below, is that the well recharge area is contained within the area that is already owned by the Water District. If that is the case, we need worry no more as long as the Water District understands that it must monitor and control what takes place on that land.

Coordination Within The Town And With The Town Of Bowdoin

There is a very strong need to coordinate the Town's and the District's long range planning. The District needs to know where future development is being directed and the Town needs to know where the well's protection area is so it can plan for future development accordingly.

Traditionally, the extension of water and sewer service is one of the strongest tools the Town has to guide growth. In this case, because of the scarcity of available water, the need to protect the water supply will influence the location of future residential, commercial or industrial development.

There is also an urgent and strong need to coordinate planning and controls with the Town of Bowdoin. The well that supplies water to Bowdoinham is in Bowdoin. It is also very likely that most of the recharge area is in Bowdoin. This means that the Bowdoinham Water District and the Town of Bowdoinham do not have direct control over the land uses in the recharge area of the well. Management planning for the McIver well will need to be done with the Town of Bowdoin.

Limited Capability To Offer Fire Protection For Expansion In Commerce Or Industry

The current pump and storage provide adequate pressure for most of the residences. Insurance companies recommend greater pressure for fire protection for industrial or commercial uses. This may be solved when a second source is developed. Since it is a limit for expansion of business, it is

more of an economic development than a water supply issue. It should be discussed in that element.

Limited Fiscal Capacity of The District

There is a concern whether the District's fiscal capacity is adequate to meet the increasing regulatory requirements and customer demands. With a customer base of only 245, the operating and capital costs of the District are being spread over a very small population base.

The new pump station cost the District \$495,000 and will result in a rate increase of approximately 45%. While the District's customers have traditionally enjoyed very low rates, when the rate increase goes into effect, the average household being served by the Bowdoinham Water District will pay more per year for water than most customers of public water districts in Maine. While the District's operating costs remain low, the District is very concerned that future capital needs to meet regulatory requirements and customer demand can not be met by the District's existing fiscal capacity. While grant money is available to water districts, the Town of Bowdoinham's relatively high household income limits the District's access to grant programs.

Survey Results

Residents were asked for their agreement on the need for more stringent controls than required by the State if shown to be necessary to protect the quality of the neighbor's drinking water. This question applies to the protection of the public and private wells.

81% agreed
8% disagreed, and
11% were neutral.

This agreement with support for stringent controls to protect the groundwater supplies was among the strongest statements made in the survey. It is safe to conclude, therefore, that there is support for protection of the land area, which supplies water to the citizens of Bowdoinham.

Goals And Strategies

We find that

- ◆ There is uncertainty about the long term capacity of the public water supply well in Bowdoin
- ◆ There is also uncertainty about the area from which the well draws its water, (the recharge area or, officially, the Wellhead Protection Area).
- ◆ This area needs to be protected from actions which may contaminate the ground water

- ◆ The District does not have any land use control over the Wellhead Protection Area except over the land that it owns directly
- ◆ If the extent of the Wellhead Protection Area is larger than the land area owned by the District, a management plan will have to be developed in cooperation with the Towns of Bowdoin and Bowdoinham
- ◆ Customers are now faced with unaccustomed increases in rate due to increasing regulatory requirements and customer demand. With a customer base of only 245, the operating and capital costs are being spread over a very small population base.

GOALS

- 1. Delineate a Wellhead Protection Area through hydrogeologic study.**
- 2. Develop a Management Plan if the Wellhead Protection Area is larger than currently owned by the District,**
- 3. Identify and protect second source(s) for public water supply, preferably located in Bowdoinham.**
- 4. Update the 1992 Wright-Pierce study so the long- term capacity of the District can be better assessed.**

Strategies

1. Apply for a grant from the Department of Human Services, Office of Drinking Water, or in cooperation with the Town CDBG for delineation, alternative source identification and development of a Well head Protection Management Plan.
2. Request the Selectmen in Bowdoin and Bowdoinham to appoint a joint committee to develop a Management Plan.

TRANSPORTATION

Road System

Using the State Department of Transportation's (MDOT) Functional Classification of roads, we have in Bowdoinham:

Arterials

These are the most important travel routes in the State. Volumes of traffic typically range from 10,000 to 30,000 vehicles per day. The State is responsible for all construction, reconstruction, and maintenance.

Bowdoinham has 7.39 Arterial miles of I-95 North and South.

State Aid Highways- Collectors-

These are Collector roads which collect and distribute traffic to and from the arterial routes. They serve places of lower population density and are somewhat removed from main travel routes. The State is responsible for construction, reconstruction, and summer maintenance, but the town is responsible for winter plowing and maintenance.

Route 24	Bay Road	2.5 miles
	River road	7.9 miles
Route 125	Main Street	1.4 miles
Route 138	Post Road	7.9 miles
Route 201		.25 miles
White road		4 miles

Local Roads

Local roads are designed to provide direct access to abutting properties. All roads not state or state aid are considered local roads. Summer and winter maintenance are entirely the responsibility of the Town.

In Sum in Bowdoinham there are:

Arterial	7.39 miles
Collector	10.4 miles
Local	30.53 miles
Paved	21.42 miles
Gravel	9.11 miles

Traffic

Traffic Volume

The change in traffic at particular intersections is one means of assessing the impact of development on the roads and ease of transportation

MDOT provides traffic counts upon request. The latest data on the annual average daily traffic counts available is for 1996. Comparison is a little tricky because DOT doesn't always measure traffic at the same locations.

MDOT considers 7,000 to 9,000 vehicles per day an acceptable full capacity on a rural road. According to this standard (which may be higher than is acceptable to Bowdoinham citizens) the traffic in Bowdoinham is well below the capacity of the roads. The highest count was at Clay Hill on River Road, just past the Village, it was 2820 daily, in 1996.

The percent change in traffic has been calculated for the spots where traffic was counted in 1980, 1988 1990 and 1996 The largest increase since 1988 was 63% on Main just east of Fisher road. There was a 58% increase at Clay Hill just North of the Village between 1988 and 1996. This is as close as Bowdoinham comes to a 'bottleneck'. This area drains all the traffic from east Bowdoinham, White Road, Carding Machine Road, and the River Road all the way to Richmond.

There was an increase in traffic on the Post Road, north of Millay and River Road north of Brown Point Road by 29% and 22% respectively. That would seem to reflect residential growth on Post Road, White and Carding Machine Roads.

Accidents

Accident data must be studied carefully taking in consideration many factors including traffic counts, road geometry, and weather conditions. Accident data is available from the MDOT.

The highest accident locations are as one would expect on heaviest traveled routes under the worst conditions. These locations are also State roads where Summer maintenance is the responsibility of the State. As growth continues, a reduction in accidents is unlikely so as proposals for new subdivisions come forward possibly impact fees should be imposed to bring roads up to standards to accommodate higher traffic demands.

Town Roads

The Town of Bowdoinham has within its jurisdiction 30.6 miles of roads and three bridges to maintain. Roughly 21.4 miles are paved and 9.1 miles are gravel. Additionally, winter maintenance of another 15 miles of State-Aid road is the responsibility of the Town .

The Town Manager serves as the Road Commissioner and is therefore responsible for assuring that the roads are safe and convenient. (23 MRSA Sec. 3651). Bridge Division in MDOT surveys the three local bridges.

Summer Maintenance

Summer maintenance is accomplished using a combination of internal resources and contractors. The Public Works employees perform simple and routine tasks that are not capital intensive, such as spreading small amounts of gravel, spreading calcium chloride for dust control, repair/replacement of signage, patching pavement, brush cutting, culvert replacement and ditch maintenance, roadside ditching, guardrail repair, and bridge deck repair.

Contractors are used for paving, stripping pavement, shoulder mowing, grading of gravel surface roads, spreading large amounts of gravel and.

Winter Maintenance

Winter maintenance is also through a combination of internal resources and contractors. The contracts are generally for a three-year period.

A contractor may bid and be awarded more than one contract provided he has the equipment and manpower to complete the work. Sand and salt is purchased from a supplier, bought mixed, delivered, and stockpiled. Sanding is in part by the public works employee and in part by a contractor.

Funding

Revenue is raised from various municipal taxes with the State's Local Road Program contributing \$44,496, the last 5 years.

The Legislature has made changes to the Local Road Assistance Program in 1999. The State may fund 2/3 of the capital improvements on local roads, if MDOT and the Town agree it. Because there is competition for these funds, MDOT looks favorably on those towns which have submitted a prioritized list of needs to MDOT. If MDOT agrees, it will incorporate the priorities in its two year and 6 year Long Range Plans. The Town submitted its priorities to MDOT in November of 1999.

Other Modes Of Transportation

Railroad

The railroad line that goes through Bowdoinham is owned by the State. It begins in Brunswick, goes through Topsham, and ends in Augusta. The State intends to rehabilitate it for freight and passenger use. A freight train goes through occasionally. Special occasion train rides are provided for festivals and at leaf peeper time.

Airport

Bowdoinham's privately owned Airport is known as Merrymeeting Field and FAA designator 08B. At one time in the mid 1980's the airport was home to over thirty small aircraft. Over the past two years the number has fluctuated between ten and fifteen. The only commercial activity is flight instruction and scenic rides. At its peak as many as four planes were available for rental and flight instruction along with four to five part time flight Instructors. Currently one aircraft and one flight instructor handle a hand full of students.

Merrymeeting Airport's 1948' runway is considered short for average general aviation aircraft. Only single-engined and a very limited number of twin-engined aircraft can safely operate in and out of Merrymeeting. Mud season is another disadvantage for a gravel/grass runway and the airport is closed during much of the Spring season. Although the runway is marked with nonstandard lighting, Only local pilots can safely land at night because of unmarked hazards common to both ends of the runway.

Analysis And Issues To Discuss

There is an intuitive assumption that the impact of residential or commercial growth outside the village will increase the traffic and wear and tear on the roads. This can be expected to reflect on higher maintenance costs-increased traffic volume and higher rate of accidents.

Spending on road maintenance has fluctuated from year to year, but the general trend is significantly up. Actual expenditures have gone from \$135,144 in 1987 to \$ 171,259 in 1998, a 26% increase.

The fluctuation shows uneven spending and probably a lot of deferred maintenance. The year after under spending, there is a significant over spending. The budget now is significantly increasing, from \$135,595 in 1987 to \$343,941 in 2000- a 150% increase. This reflects the high cost of not staying with a regular timely maintenance schedule.

Road Maintenance

Ideally paving should be done on a ten year plan if possible. Road base, geometry, traffic load, and weight determines if pavement will last the average life span. Many of Bowdoinham's roads do not have adequate base and pavement designs to meet increased traffic volumes and loads. Priorities should be set to determine what roads should be overlaid with a minimum 1½" overlay and what roads should be rehabilitated or reconstructed. An improved program of drainage maintenance can reduce paving costs.

To Pave or Not to Pave Gravel Roads

Paving old gravel roads is rarely cost effective and in some cases can present a new set of problems. Paving a road with inadequate drainage can induce capillary rise and premature breakup of pavement. Most of

Bowdoinham's gravel roads fall into this category. Some view gravel roads as a means of preserving the rural character, consistent with the expressed desires of the majority of residents.

Private Roads

Bowdoinham has a great number of private roads and/or long driveways. Potential problems include impediment or delay in delivering fire protection, ambulance service, pickup for school children and winter plowing.

Urban Rural Initiative Program

For these reasons and others, MDOT has been encouraging towns to adopt a Road Surface Management System since 1990. The program, workshops and a workbook offer towns a systematic way to inventory and evaluate road surface conditions. The information is then used to prepare a prioritized schedule and budget for repairing or resurfacing all roads.

The incentive to prepare such a plan has been considerably strengthened by the "Urban-Rural Initiative Program" passed by the 119th Legislature, Chapter 473 of PL 1999. First, all funds received from MDOT must be spent on "capital improvements", defined as *"any work on a road or bridge that has a life expectancy of at least 10 years or restores the local-carrying capacity"*. (section D-3)

Second, The State-Aid and minor collector roads will only be repaired if the town agrees to jointly fund the project. (1/3 town and 2/3 DOT.-according to the "Highlights of the new "Urban-Rural Initiative Program" in Maine Local Roads News, Summer 1999)

Third, to be eligible to receive the state share a town must submit a prioritized list of desired projects for the DOT's six year plan. (this was done in November of 1999)

It is not clear if the amount distributed to towns will go up. Now rural towns receive \$600 per lane mile for state-aid minor collector roads. But beginning in July 2001, annual funding to municipalities will "float" with Highway Fund revenues.

Goals And Strategies

Traffic

We find that:

Traffic is increasing in Bowdoinham and there are a number of roads where the accident rate is above average.

Goal

Reduce The Accidents On Our Roads

Strategies

The Road Commissioner or responsible police agency should annually request and review traffic volume and accident reports. That person should analyze the causes of accidents and make recommendations on measures necessary to protect the safety of the driving public. The Selectmen then should include appropriate actions such as signage, speed limit enforcement or road reconstruction (if State road, then urge the State to do so) in their annual budget process.

Road Maintenance

We Find That:

Regular and systematic road maintenance saves money in the long term. If the roads are allowed to wear out it will be more expensive to build them back up than it would be to maintain them.

MDOT will be requiring Road Surface Maintenance Plan in order to be eligible for local road assistance.

Goals

Prepare and Implement a Road Surface Maintenance Plan

Strategies

The Selectmen shall require the Road Commissioner to keep current on changing programs at MDOT, their 6 year Plan and report such changes to the Selectmen

The Road Commissioner shall prepare a 10 year Road Surface Maintenance Plan which shall be included in the Capital Improvement Plan.

Private Roads

We Find That

There are an increasing number of private roads and/or long driveways. Potential problems with these private roads include;

- ◆ Delay or difficulties for emergency vehicles.
- ◆ The possibility that future owners may want the Town to take over the road with the Town having to assume the cost of bringing the road up to standards.

The Town does not now have a policy on accepting private roads. There are no requirements to build roads so that they can meet Town Standards. There are also a number of abandoned former Town ways, public access to which provide a recreational opportunity. These traversing the Town East to West are described in the Recreation Section of this plan

Goal

Complete a Study on the Private Roads

Strategy

Appoint a committee to examine the issue, gather information on the extent of private roads, their conditions and problems that may have emerged and options for addressing them.

Inventory Public Right of Way and assure that they are open to the public.

FISCAL CAPACITY

Introduction

The purpose of this element of the plan is to gain an understanding of the financial condition of Bowdoinham.

In Table-F-C-1, we present the relationship between state and local assessed value and the property tax rate. Revenue sources are presented in Table F-C-2.

Total expenditures are presented on Table F-C-3. The education and road maintenance being the largest and most complex are presented separately.

Comparisons of revenues and expenditures reveal the bottom line, and some interesting relationships between the type of revenue and the expenditures.

Finally, we note that Bowdoinham has a good start on Capital Investment Planning.

Assessed Values And Tax Rate

TABLE F-C-1
LOCAL AND STATE VALUATION AND TAX RATE

YEAR	Local Assessed Value	State Assessed Value	Annual % Change of State	Tax Rate
1988	31,894,232	62.90		22.3
1989	58,739,739	71.00	12.9%	16.3
1990	59,320,930	83.00	16.9%	20.55
1991	61,330,335	91.35	10.1%	22.1
1992	90,803,200	91.55	0.2%	14.5
1993	93,210,700	94.75	3.5%	13.6
1994	95,431,500	93.95	-0.8%	14.25
1995	97,559,600	97.50	3.8%	15.1
1996	98,651,600	100.40	3.0%	15.5
1997	104,060,300	104.60	4.2%	16.4
1998	104,148,400	101.30	-3.2%	17.3
1999	105,154,400	NA	NA	17

Table F-C-1 above shows local and state assessed property value, and tax rate Source of data are Local Annual Reports. The State Assessed Value was dictated over the phone by David Ledew, Director of the Property Tax Division of Bureau of Taxation. He said the state assessment is calculated annually

by adding the actual sales values to the last local 100% revaluation values. The assessed values show a steep rise from '88 to '91, leveling from '91 to '95, there is a rise apparently till '97 and a drop again in '98. This may correlate with the recession in the early 90's.

Table F-C-1 illustrates what happens when there is revaluation. The state and the local assessed values are aligned and the tax rate drops. The reason is that the tax or mill rate is the rate per 1000 of evaluation. When the assessment value goes up, and the amount of taxes to be raised is roughly the same, there is a higher base value to be taxed (~ \$61 million before revaluation to ~ \$90 million after.) Therefore, the amount per thousand (the mill rate) goes down.

Popular wisdom says that increased assessment would bring down the tax rate. Table F-C-1 does not show that trend. This may occur in the longer term, or the increased values may slow the increase, but there are so many factors affecting the tax rate that it is nearly impossible to see any correlation in a ten-year period.

Revenues

Revenues can be grouped into two major categories: property tax and non-property tax. Non property tax includes excise tax on cars and boats, State revenue sharing, grants, loans, and Local Road Assistance. Local non-property tax revenues include license fees and permit fees, recycling income, Town Hall rental, utility income, animal control and building permits.

**TABLE F-C-2
SIGNIFICANT SOURCES OF REVENUE**

Year Ended	TOTAL REVENUE	Property Tax	Total Non-Property	Revenue Sharing	Total Local Fees,Permits	Recycling Income	Local Road Asst
1988	1,084,069	711,241	372,828	129,100	NA	NA	50,100
1989	1,306,231	957,458	303,773	88,197	27,487	NA	73,240
1990	1,629,418.00	1,219,045	410,373	140,346	7,616	2,165	60,000
1991	1,699,272.00	1,277,279	412,160	137,170	10,451	3,030	60,000
1992	1,720,626.00	1,720,626	398,174	56,675	6,033	2,231	56,675
1993	1,811,363.00	1,344,208	418,815	115,311	34,281	28,955	66,650
1994	1,813,520.00	1,383,902	378,500	99,240	48,335	43,754	44,110
1995	1,926,317.00	1,478,043	410,562	100,000	56,266	51,769	44,100
1996	2,033,868.00	1,534,880	392,150	142,101	53,362	48,851	45,257
1997	2,214,328.00	1,682,562	467,350	135,172	52,399	45,573	44,496
1998	2,315,720	1,707,827	507,925	153,290	78,332	51,624	44,496
1999	2,745,985	1,838,003	597,657	164,000	50,825	50,500	45,000

Source: Audit reports 1988-1999

State subsidy for education, \$1,118, kind of a revenue does not come to the town, it goes directly to SAD 75.(see page 5 for an attempt to explain the flow of education money.) school financial system.)

Table F-C-2 shows the major sources of revenue and categories of interest.: municipal revenue sharing, total local license fees income from the sale of recycled materials and, local road assistance.

The property tax is the largest source of revenue for the Town. It was 66% of the revenue in 1988 and 74% in 1998, a 12% increase . Non- Property Tax was 34% in 1988, down to 22% in 1998.

Note the increase in recycling income from \$2,165 in '90 to \$51,624 in '98. The fluctuation in revenue sharing reflects the state budget crisis in '92. It is just now returning to its levels in 1990. Notice too that Local Road Assistance from the State has dropped to a constant ~\$45,000 since 1994.

Expenditures

Table F-C-3- above shows the major categories of expenditures. The total budget increased from \$1,131,223 in 1988 to \$2,226,619 in 1998, a 97% increase; the Education budget increased from \$723,212 in 1988 to \$1,466,593 in 1998, a 102% increase; and the General Government increased from \$114,740 to \$342,767, a 198% increase.

Analysis And Observations

The following observations will be based on Table F-C-5, "Ten Year Revenue and Expense Categories and Affect on a Balanced Budget", prepared by the Town Manager. Because of their significance in the budget this section starts with an analysis of the Education and Road Maintenance Budget.

Education Budget

The source of the following information is SAD 75 "School Budget Report 1999-2000" and conversation with Ron Lavender, the Business Manager of SAD 75.

The Town of Bowdoinham, along with Topsham, Harpswell, and Bowdoin belong to SAD 75. The total budget of SAD 75 in FY 00 is \$24,378,357.

The revenue for this budget comes from two major sources: the State and the member municipalities. The state contributes \$10,386,276 or 42.6% of the SAD 75 budget

It costs the taxpayers of Bowdoinham **\$2,714,315** to educate 492 students in grades K-12 in School Year 1999-2000 (FY00). \$1,595,944 or 59% of this comes from property taxes collected by the town. \$1,118,238 or 41% is from income, sales, and other taxes collected by the State.

The allocation of cost to the municipalities is based on the average of each town's enrollment and state valuations specified in the District's Certification of Organizations issued by the State Board of Education. Bowdoinham 's percent of enrollment at SAD 75 is 14.88%. Its percent of state valuation is 9.16%. The average of these two figures is 12.02%. Applying the formula Bowdoinham 's local assessment for FY00 is 12.02% of \$13,277,406 or **\$1,595,944**.

As we know the State uses a formula, also based on valuation and enrollment to attempt to equalize the per pupil support for public education. Mr. Ron Lavender, the Business Manager of SAD 75 assures us that is a reasonable approximation to use the same average percent, 12.02%, to calculate the State's contribution to SAD 75 on behalf of Bowdoinham. That figure is **\$1,118,238** for FY00 (School Year 1999-2000).

Road Maintenance Budget

As shown on Table and Graph F-C-4, road maintenance activity and expenditure varies widely from year to year. Over the years there is an increase, reflecting the increased wear on the roads by the growing population. State Local Road Assistance, however, has stayed nearly constant through the last 10 years.

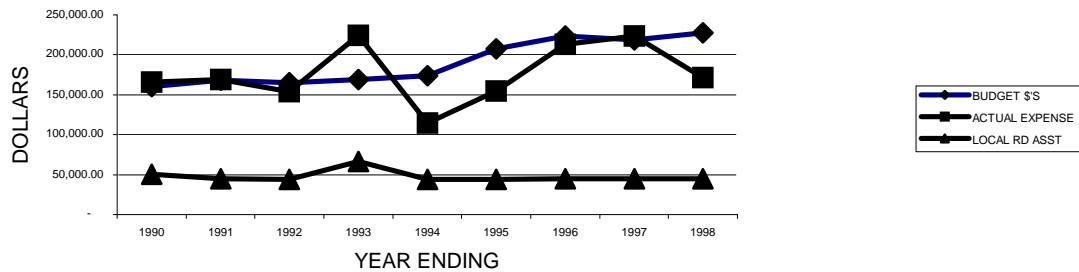
Road repair is obviously an expensive item. Some years it exceeds all other municipal government expenditures. It would seem that year to year

TABLE F-C-4

ROAD MAINTENANCE

YEAR ENDING	BUDGET \$'S	ACTUAL EXPENSE	LOCAL RD ASST	SURPLUS (OVERSPENT)	FATE		
1990	159,970.00	165,661.00	50,274.00	(5,691.00)	Overexpended		
1991	168,052.00	169,429.00	44,688.00	(1,377.00)	Overexpended		
1992	165,324.00	154,092.00	44,100.00	11,232.00	Surplus		
1993	169,150.00	224,083.00	66,650.00	(54,933.00)	Overexpended		
1994	173,610.00	114,818.00	44,110.00	58,792.00	Surplus		
1995	207,493.00	154,421.00	44,110.00	53,072.00	Surplus		
1996	223,309.00	212,953.00	44,496.00	10,356.00	Surplus		
1997	219,120.00	223,162.00	44,496.00	(4,042.00)	Overexpended		
1998	227,420.00	171,259.00	44,496.00	56,161.00			

ROAD BUDGET



budgeting may not be appropriate for such a large expenditure

Non-Property Taxes Pay For Municipal Budget

Table F-C-5- on page 125, prepared by the Town Manager, is a summary of the Town's financial condition and management. The most interesting observation is that almost the entire municipal budget is paid for by Non-Property Tax Revenue. The Property Tax is used almost entirely to pay for Education.

Non-Property Tax revenue includes Excise Tax on boats and cars, State revenue Sharing, Local Road Assistance, grants, recycling income, license and permit fees. It does not include investment income or security gains.

TABLE F-C-6

REVENUE AND EXPENDITURE COMPARISONS

FISCAL YEAR	MUNICIPAL BUDGET	NON PROPERTY TAX REVENUE	Percent of Non-Property Tax revenue	Education Budget	Property Tax Revenue	Education % of Property tax Revenue	COUNTY TAX	Percent of Property tax Revenue
87/88	381,933	372,828	102%	723,212	711,241	102%	44,034	6%
88/89	434,101	303,773	143%	845,111	957,458	88%	52,060	5%
89/90	502,749	410,373	123%	1,018,242	1,219,045	84%	62,624	5%
90/91	508,703	412,160	123%	1,090,357	1,357,401	80%	69,190	5%
91/92	506,040	398,174	127%	1,053,634	1,319,572	80%	81,295	6%
92/93	513,858	418,815	123%	954,530	1,268,665	75%	92,960	7%
93/94	547,500	378,500	145%	1,056,385	1,360,902	78%	99,115	7%
94/95	596,378	410,562	145%	1,153,498	1,473,150	78%	98,600	7%
95/96	593,472	392,150	151%	1,283,335	1,529,099	84%	106,689	7%
96/97	619,262	467,350	133%	1,411,235	1,716,797	82%	117,438	7%
97/98	680,683	507,925	134%	1,480,347	1,702,326	87%	131,138	8%
98/99*	827,754	745,805	111%	1,568,324	1,688,607	93%	134,034	8%
99/00**	1,006,860	907,982	111%	1,596,007	1,728,003	92%	139,118	8%
Average %			129%			85%		7%
* not yet audited								
** budgeted								

Table F-C-6 compares the amounts collected through local non-property tax revenues with the municipal expenditures; property tax vs school budget; and county tax as percent of Property tax.

The Table shows that on the average in the last 10 years the municipal budget has been 129% of the Non-Property tax revenue. In some years, especially the last two, the Non-Property Tax revenues just about completely covered the municipal side of the budget.

The Education budget has been on the average 85% of the Property Tax. That is nearly all of the Property Tax goes to support education.

Actually when you consider the county taxes which have been on the average 7% of the property tax revenues, the Property Tax “pays for” the Bowdoinham assessment for education and county services. (“Pays for” is in quotes because obviously there aren’t dedicated revenues, all revenue is pooled and drawn from to pay expenditures.)

Fund Balances And Debt Load

Table F-C-7 is another summary table. It shows “The Bottom Line” or the

TABLE FC-7							
THE BOTTOM LINE							
YEAR	Total revenue	Total Expenditure	Surplus (deficit)	Capital Outlays	Long Term Debt	Fund* Balance	Dedicated Reserve Funds
1988	1,091,982	1,131,223	(50,041)		90,000	333,151	75,739
1989	1,308,064	1,315,217	(7,153)		81,000	292,102	77,320
1990	1,576,332	1,585,047	(8,715)	34,853	99,237	259,665	15,467
1991	1,699,272	1,669,317	29,955	16,643	85,092	208,909	5,116
1992	1,720,626	1,593,206	127,420	19,284	172,389	296,463	2,610
1993	1,811,363	1,610,069	201,294	46,220	158,735	429,972	2,721
1994	1,813,520	1,633,027	180,493	26,549	133,842	593,827	2,885
1995	1,926,317	1,768,254	158,063	7,314	110,686	736,690	2,982
1996	2,039,553	2,008,472	31,081	-	91,420	553,120	3,215
1997	2,214,328	2,169,721	44,607	44,237	71,273	597,727	3,434
1998	2,315,720	2,226,619	89,101	581,772	421,302	659,328	4,074

Source: Audit Reports

Fiscal Status of the Town, in the last 10 years. It shows the accumulated Fund Balance, and the Debt Load.. Note that in spite of a 40% increase in expenditures, there was a surplus every year, and a 150% increase in the accumulated Fund Balance.

The long-term debt dropped from \$99,237 in 1990 to \$71,273 in 1997. The Town was able to borrow \$363,000 for a new Fire Station.

In the past several years the Town has made much capital outlays, added to the fund balance, and developed reserve funds while keeping the tax rate fairly stable. Fees for solid waste disposal, income from recycled goods and income from prudent investments all have helped to minimize property tax increases.

Fund Balance

The Fund Balance provides for fiscal emergencies and reduces the cost of borrowing money to pay bills at those times when the town is spending money faster than revenues are coming in. Bowdoinham’s budget year begins on July 1 of each year but the first half of property taxes are not due until October. Maintaining an adequate fund balance provides for cash flow, emergencies, and meet expenses year round.

In 1995, the Town had accumulated a high of \$673,000 in fund balance and acted on the Board of Selectmen's recommendation to transfer \$250,000 from fund balance to various reserve accounts to help boost savings for capital improvements for public safety, public works, and recreation. In recent years the town has also appropriated fund balance funds to reduce the tax commitment and keep tax increases to a minimum.

In general the town has followed a prudent plan of accumulating a healthy fund balance and reserves to help stabilize taxes, obviate the need for tax anticipation borrowing, and plans for the future capital improvement needs.

Borrowing Capacity

The amount of debt that can be incurred by a municipality is limited by State statute. Total outstanding obligations during a year can be no greater than 15% of the assessed value of taxable property as of the beginning of the fiscal year. At an assessed valuation of \$104,148,400 in 1998 the Town could borrow up to \$15,622,260. At the end of fiscal year 1998, Bowdoinham had a Long term Debt of \$421,302, which is 0.42% of the total assessed value. Obviously, Bowdoinham is well below its borrowing capacity.

Capital Investment And Planning

The plan for capital improvements

- ◆ provides a mechanism for estimating capital requirements;
- ◆ scheduling all projects over a fixed period with appropriate planning and implementation;
- ◆ budgeting high priority projects and
- ◆ developing a project revenue policy for proposed improvements;
- ◆ coordinating the activities of various departments in meeting project schedules;
- ◆ monitoring and evaluating the progress of capital projects;
- ◆ informing the public of proposed capital improvements.

Bowdoinham is well on its way toward having a Capital Improvement Plan. It has three essential components:

1. A comprehensive inventory of all land, buildings, furniture, equipment, vehicles, computer system, fire fighting equipment, recreation equipment (down to the number of balls!)

The real estate spreadsheet has columns on map reference, assessed value of land and buildings, year purchased, purchase or construction cost, capital investments since purchase and book or market value. The property inventory includes year bought, purchase price, on hand value and a separate column for \$500, plus value.

**TABLE F-C-8
CAPITAL RESERVE ACCOUNTS**

Year	Public Works	Fire Dept	Solid Waste	Bridge Maintainance	Police Dept	Office Equip	Town Hall	C
1990	39,581	30,498	35,405		5,307		1,000	
1991	40,804	32,318	54,576		8,470		1,000	
1992	43,468	35,052	70,064		8,660		2,000	
1993	48,754	39,021	53,410		9,794		4,000	
1994	70,632	43,684	41,388		10,992		700	
1995	80,679	47,464	37,689		12,113		1,700	
1996	229,790	109,056			12,405	12,700		
1997	200,212	109,941		4,258	4,169	2,979		
1998	110,886	78,750		5,817	4,409	3,979	3,000	

2. It started a capital reserve account in 1990 According to the latest audited report for '98, Public Works had \$110,886, and Fire Department had \$78,750. The Total Capital Reserve Balance is \$206,841
3. The Plan, itself, started in 1995, it is a work in progress. It sets up a good template in which to organize and prioritize the wish list of each department. Some of the listed items have already been implemented

Conclusion

Bowdoinham is in excellent fiscal condition. The combination of the Town's low debt ratio and savings in the form of reserve accounts and fund balance, allows for great flexibility in meeting the capital needs of the future. Some additional debt can be incurred for capital improvements to stabilize the tax rate without impairing the financial health of the Town.

Strategies

1. Include a Road Improvement Plan in the Capital Improvement Plan for two reasons:
 - a. The scale and cost of road work does not lend itself to annual budgeting and
 - b. The recent restructuring of the Local Road Assistance Program requires the Town to submit a Road Improvements Capital Improvements Plan in order to be eligible for 2/3 state share.
2. Once firmly established, the town might be ready to extend capital improvement planning to 10 years.

TOWARD A FUTURE LAND USE PLAN

Existing Land Use and Pattern

The existing land use and pattern is depicted on the Land Use Map, based on 1997 Assessor's records. It shows the distribution of residential, commercial, civic, religious, municipal, industrial, transportation and major utility uses within the town.

Residential

Single family and mobile homes are found along all the major roads. The attached "Development," map shows that most of the road frontage is taken up by single family homes. The multiple-family units on outer Main Street just before the I-95 intersection on Preble Street are elderly and public housing units.

Agriculture

Bowdoinham is unique in still having significant active farming on contiguous land. 2000 acres (a substantial portion of land actively farmed) is enrolled in the Farm and Open Space Tax Program.

From a windshield survey of all the roads in Bowdoinham conducted in January 1998, it is evident that active agricultural operations are located as follows:

- ❖ On prime agricultural, sandy river bottom land along the Cathance on the Bay Road, in East Bowdoinham, two large lots formed in the triangle between Abagadasset and Pork Point roads; along Stevens Point, and Brown's Point Road.
- ❖ The majority of the "Alice Wheeler Farm" in Richmond whose development rights was purchased by the State in 1989 actually lies in Bowdoinham along South Pleasant Street and the River Road.
- ❖ White Road, along about 1.5, miles south of the Richmond town line
- ❖ Ridge Road, for about 1 mile south of the Richmond town line, and the southern half of Dingley Road.
- ❖ Other smaller areas on Fisher Road, Carding Machine Road, Millav Road, Post Road and River Road.

Land with Forest Cover

Land in this category includes other lands in trees but not necessarily managed for timber production, though they may be subject to harvest of one form or other.

This is the largest single form of land cover and probably the most extensive land use in terms of acreage. Active timber producing land is not a land use category. However, the acres in the Tree Growth Tax program give an approximation of land in timber production. According to 1997 records, there are 1065 acres of hardwood, 1052 acres of softwood and 1828 acres of mixed hardwood enrolled in the Program. Relatively large acreage of Forestlands is found:

- ❖ Adjacent to farm land between the Ridge and White roads, one large parcel on Center Point road,.
- ❖ In the triangle formed between Millay and the Post roads.
- ❖ along Denham Stream.

Commercial

Although not an official mapped category, a significant sector of commercial activity is conducted as home business. For purposes of inventory, a “home business” is defined as a business located on a property which also serves as the residence of the owners, and it occupies a smaller proportion of floor areas than the residence. From the windshield survey conducted by members of the Committee, we estimate that there were about 23 such businesses in Bowdoinham in 1998.

Commercial uses, as distinct from home businesses, are located on property not used for residential purposes, or if so it is clearly secondary to the business. About half of commercial use is concentrated in or near the village, with the other half along Post Road, Carding Machine Road, River Roads, and Rt. 125, and Main Street between the Village and I-95.

Industrial- light manufacturing

There are two light manufacturing businesses in Bowdoinham. One is a rapidly growing manufacturer of electronic parts for neuroscience research and brain surgery in the Village, the other is a sign manufacturer located along Main Street.

Municipal/Public Uses

The Town office, library, old fire station and public boat access, waterfront park are in the village. The new fire station and the U.S. Post Office have both recently moved “out”, a little beyond normal walking distance, about a mile or so to RT 125 by the Interstate and the intersection of Post and Millay roads, respectively.

Civic/Religious

Two churches, Knights of Pythias, and Masons and the Grange, all located in the Village.

Utilities

Railroad, transmission lines and public water distribution pipes are depicted on the land use map. The natural gas pipeline being constructed this year, not on the maps constructed in 1997 cuts across NW corner of Bowdoinham.

Land in (some degree of) Public Ownership

Bowdoinham has 22,000 acres of land, 6,000; or 27% of these in some form of public ownership. 4,000 acres are in the Tree Growth or Farm and Open Space tax Program, 2,000 acres have been actually transferred to various state agencies, local land trust or institutions: the "Alice Wheeler Farm", Verrill Estates, Bachman Property, and land on the Wildes Road .

The Pattern of Land Use

Bowdoinham has a Village center along the waterfront, which is not so much the center of commercial activity it once was, but is the focal point of community life. It contains churches, civic organizations, town government, library, school, and the new Waterfront Park. It also contains the town's only restaurant, general store, and gas station.

Residential development has traditionally, not just since the 50's, proceeded along the roads, which radiate out of the Village. While sprawl along roads is evident, Bowdoinham is notable for its rural country landscape, intact in spite of the dotting of houses along all the roads. This country landscape is created by the relatively large acreage of still active farms, forestland, and the significant frontage on Merrymeeting Bay. There are large areas which hold significant wildlife, bird and deer habitat, and even an eagle's nest (ot two). Bowdoinham also provides one of the few points of public visual access of a large expanse of Merrymeeting Bay.

The Village

The Village in Bowdoinham is delineated on the " Most Suitable for Future Growth" map. The Village both defines the community and its protection is a key goal of this plan. It is the locus of community life and the focus of protection and revitalization efforts.

The boundaries of the Village roughly correspond to the reduced speed limit posted on the roads: on Bay Road , at the intersection of Wallentine Road; on Main Street at the Fisher, Post Road intersection; ,Ridge Road just north of the Community School ball fields; on River road, at the intersection of Brown Point Road.

The Village is essentially a mixed use 'traditional neighborhood" developed up Main Street from the landing on the Cathance River.

Cathance Landing is also the historical Centrum of Bowdoinham. Settled in 1800, shipbuilding, warehouses, icehouses mills, stores, and shipyards lined both shores of the Cathance.

Stately historical homes, businesses, and manufacturing operations shared frontage on the steep Main Street

This same area is still the center for municipal facilities and civic clubs. It still looks like the traditional village it was in the 19th century.

There is only one multi-family apartment building on the corner of Main and River Rd. The Grange, Knights of Pythias and the Apartment Building are the three tallest buildings in Town.

The Library, Town Hall, Town office and old Fire Station are all located in the Village- (The relocation of the Post Office to beyond the Highway interchange is much lamented and is the inspiration for the efforts to prevent this type of exodus from the village.)

Revitalization of the Village through the reuse of old building is evidenced by FHC, the rapidly growing manufacturer of electronic tools for neuroscience. The Waterfront Park at the landing is bringing back this location to the focal point of the Village. Two recent examples of buildings reused are the Bowdoinham Credit Union and the Antique Shop, which is the old office building of the Sagadahoc Mill.

The Village has grown to its maximum residential capacity over the past 100 years. This is because the lot sizes are considerably smaller than in the rural areas. The lot sizes range from ¼, ½, to 1 acre. Also the suitability of soils for septic systems is very poor. Over the past 10 to 15 years the village has issued several plumbing permits for replacement septic systems. Because of the moderate to severe slopes in the village and the poor soil conditions, most replacement septic systems are extremely large and almost always require a replacement system variance.

There are several different types of soils located within the village area. These soils are classified as Buxton Series, Suffield Series, Hollis Series, and Scantic Series. The most prevalent is the Buxton Series. This soil is made up of silty clay loam. It has a very slow permeability and is not very well drained. This type of soil is generally found in areas that have moderate to severe slopes. Septic systems are not desirable located on Buxton soils. Another soil that is shown throughout the village is Scantic Series. This is another soil is also not desirable for septic systems. Scantic soils are very poorly drained and are typically located in areas that allow for water to pond. Scattered within the village area is a type of soil that is designated as Suffield Series. When disturbed this soil has a high erosion factor. The soil drainage is moderately slow and is generally located on steep slopes. This makes the possibility of septic system installation cost prohibitive. The soil profile that falls in the middle of the village area is the Hollis Series. Hollis soil is a very

shallow soil , it can be suitable for septic systems. It is located over bedrock, which makes it suitability for septic system most unpredictable. Care must be taken to account for the variable depth of the underlying bedrock

As you can see by the soil descriptions that are outlined in previous paragraph, placing a septic system within the village area is difficult at best. The Town of Bowdoinham will continually seek out new funding sources to update and correct the dilemma that confronts the village residents regarding septage disposal.

Opinions and Values

Public opinion was assessed through interviews of opinion leaders and a carefully worded survey personally delivered to every household in 1992. While it is true this is now 7 years old, the sense of our community is that the opinions and values have not changed significantly. We think these responses are still valuable for guiding our future land use because 45% return is exceptionally high and we are relying only on those responses where there was a high degree of agreement.

The desire to protect special resources was unanimous among sentiments held; they were agreed to by more than 2/3 of the respondents:

- ◆ 81% agreed to "Protect the quality of my neighbor's drinking water"
- ◆ 79% agreed to "Protect the spawning area of striped bass, short nosed sturgeon, alewife, or any of the 10 species of anadromous fish spawning in Merrymeeting Bay"
- ◆ 76% agreed to "Protect duck and geese habitat"
- ◆ 71% agreed to "Protect mapped wetlands which have been identified as significant by Federal, State or Local officials"
- ◆ 75% agreed to " Prevent erosion from agriculture, forestry and road construction"
- ◆ 73% agreed "The Town should encourage the protection of open space"
- ◆ 76% agreed the "Town should encourage the protection of scenic views through voluntary cooperation"

The following responses, agreed to by more than 60% of respondents, will guide us as we develop our land use management programs.

- ◆ 68% disagreed that "The town should allow new business and industrial growth everywhere in town"
- ◆ 70% agreed that "Home occupations should be allowed in all parts of Bowdoinham"
- ◆ 62% agreed " The Town should have a rural zone where commercial or industrial uses (other than home occupations) are prohibited"
- ◆ 65% agreed that "There should be a district reserved for subdivisions with variable lots to preserve wetlands or special natural areas"

- ◆ 60% and more said “no” to “your neighbor should be able to do the following with his/her land, provided that it is permitted by State law: junk yards, gravel pit mining and chemical plants.
- ◆ 62% agreed that “New Mobile Home Parks should be allowed only in designated areas of Town”

Responses to three questions asked about the Village indicate strong support for mixed use and revitalization of the Village

82% agreed that the Town should set standards for all commercial developments and require their enforcement

80% thought the Town should encourage reuse of the vacant buildings

In answer to the question "What would you like to see or not see in the Village in 2001"

73% said renovated/restored historic homes

62% Public Works Garage

66% Service organizations and churches

75% Service stores and professional offices

61% street signs (have already)

81% sidewalks

66% though economic development of existing village area would be good for village as a whole

77% thought preserving the existing older buildings in the village should be encouraged

67% thought new construction in the Village should be encouraged to blend with existing traditional buildings.

Maps

The following maps were prepared under contract with the Greater Portland Council of Governments. They are based on mapped information provided by The Department of Inland Fisheries and Wildlife, FEMA, the Natural Resource Conservation Service and assessors data from 1997.

A word of caution about the use and accuracy of the maps: the maps are a compilation of many different maps produced by many organizations using different criteria and scales. The soils maps are accurate to within 3 acres, the town tax maps are just that-showing relative position of properties but not actual size, highway and natural resources maps were done long before the existence of global positioning satellites.

Accordingly, the maps should be used in a general manner only to show areas where it can be reasonably expected that greater or fewer restraints probably exists.

In areas of restraints, it is possible that there are islands of no restraints. Likewise, in areas classified as having minimal restraints, scrutiny may show that in fact, problems may need to be addressed. That is why septic designs are determined by a site visit rather than by looking at a soils map.

These maps should be used in the same manner as soil maps. They show generally where constraints are severe, moderate or few. They are useful as guides. The information is mapped on a parcel base map at a scale of 1"= 1000 feet

- ◆ Existing Land Use- described above
- ◆ Recent trends, showing subdivisions or lot splits between 1990 and 1997
- ◆ Natural Resources- - significant waterfowl and wading bird habitat, bald eagle's nest, deer wintering areas, 100 year flood plains as mapped by FEMA, high value wetland, wildlife habitat and aquifers. Some are shown in shades of color others by hatching patterns. For further details, please see Natural Resource Element of this Plan.
- ◆ Agricultural and Forest Land in Farm and Open Space or Tree Growth Tax program supplemented by currently active commercial farms known to local people, but not yet entered in the FOSTL.
- ◆ Shoreland Zoning
- ◆ Soil Suitability mapped by the GPCOG using as its main source Natural Resource Conservation Service (formerly the Soil Conservation Service) soils maps. It shows. in colors prime agricultural soils and suitability for septic system
- ◆ Natural Resource Constraint Map areas to be protected shown in colors
- ◆ Composite constraint map-is the result of overlaying the Natural Resource Constraint map, the Soils Constraint Map, USDA Prime Agricultural Soils map and the farms identified as currently active. Location of existing structures, shown by little orange blocks
- ◆ The Future Land Use Map, titled "Most Suitable For Future Growth" is derived from the Composite Constraint map showing areas with few or moderate constraints to development.

All of these maps will be available to the public at the Town office. Most are best viewed and used there because many of the features are depicted in color and lose meaning when reproduced and reduced. Those maps that show features in hatch patterns will be reduced and included with the plan.

The maps are intended as a tool for analysis. When laid over each other, they graphically show land with few, moderate and severe constraints for development.

The soil suitability maps are based on soil maps developed and interpreted by the Natural Resource Conservation Service. The mapping is an arduous process of actual test borings and estimates based on visual observations. They are said to be accurate to 3 acres at best. They can be used only as a planning guide. On site, evaluation is required to determine soil suitability for locating a septic tank and leach field on a particular lot.

Prime Agricultural soils have proven to be highly productive crop lands. Soils are also grouped into low, medium and high suitability for septic systems.

A reduced black and white version of the "Composite Development Constraint Map" is attached on the page opposite to its legend.. This map depicts areas unsuitable for development due to natural factors, such as soils, wetlands, flood plains and the preferences of the community to safeguard prime agricultural land and those forest lands and agricultural lands committed to farming or forestry.

The degree of constraints was grouped into categories. The categories are based on the degree of sensitivity or difficulty of protecting the resource. Corresponding to the legend on the Composite Constraint Map (on page 143)

- ◆ Few Constraints: this category includes land with few natural resource constraints and, high or medium soil suitability for septic systems. This category of land is the most suitable for development with few adverse impacts on natural resources. Installing acceptable septic systems is not likely to be unduly expensive.
- ◆ Moderate Constraints: Development constraints include Prime Agricultural Soils and/or soils with low suitability for septic systems, floodplains, aquifers, or deer wintering areas. To assure the protection of agricultural land, clearly the preference of Bowdoinham residents, the composite constraint map on acetate can be laid over the paper map of Agricultural and Forestland. The prime ag land is already included in the soils map.

Development in such areas, according to effective land use standards (referred to as "best management practices") can minimize adverse impacts on natural resources. Some types of performance standards may also help reduce development costs while reducing impacts on surrounding areas.

- ◆ Severe Constraints: These areas consist of land with very low soil suitability for septic systems and/or one or more of the following: high value habitats, wetlands, waterfowl and wading bird habitat and/or proximity to a bald eagle nesting site. This

category also includes portions of Coastal Wildlife Concentration Areas (identified by Inland Fish and Wildlife). While development is feasible, it is likely to be more expensive and destructive than in the Few and Moderate Constraints Categories above.

- ◆ Resource Protection (existing): This category includes those lands which are already off limits for construction. They were designated Resource Protection shoreland zone because they are either in 100 -year flood plain, or on such steep slopes that development would be exceedingly fool hardy.

The map laying exercise results in showing white areas, which are not constrained by any of the above natural factors or protection objectives of the community.

Existing Land Use Controls And Ordinances

Bowdoinham's tool kit of Land Use Controls and their date of adoption:

- ◆ Article I, Land Use Regulations and Shoreland Zoning; 9/15/1975
- ◆ Article II, Flood Hazard Building Permit System and Review Procedures; 3/3/1969
- ◆ Article III, Construction of Permanent Dwellings 3/3/1969;
- ◆ Article IV, Mobile Homes and House Trailers; 1/25/1988
- ◆ Article V, Hazardous and/or Radioactive Waste Disposal or Storage;3/2/1981
- ◆ Article VI, Multi-Family Dwelling Ordinance; 3/18/1983
- ◆ Article VIII, Subdivision Ordinance; 6/8/1976
- Article XI, Site Plan Review Ordinance;. 6/23/87
- ◆ (The State Guidelines)Shoreland Zoning ordinance 6/23/1987.

Some were original to Bowdoinham, others are adaptations from State Shoreland Zoning and Subdivision Guidelines.

Article I, The Land Use Regulation and Shoreland Zoning is such an adaptation. It adds one "general non- shoreland zoning district" to the Shoreland Zoning Districts of the State Guideline. This means that the Town only has one zone, all with one-acre minimum lot size. The performance standards are those in the guidelines of the Shoreland Zoning Ordinance and apply town- wide.

The Multiple Dwelling Ordinance is a permit process for the conversion of single family and new construction. It includes performance standards, lot and frontage dimensions. It was adopted in 1983.

The Subdivision Ordinance is based on the earliest models dating back to the 1970's. Its structure is particularly odd, where, for instance, performance standards, if any, are found under "Request for Additional Information" section.

The Site Plan Ordinance is a modern, well-structured ordinance, adopted in 1987.

Analysis

Trends

Recent residential growth exhibits the classic sprawl pattern. For example, in 1962 we counted 6 houses on the White Road. Today there are 112. The Development Map depicts the most recent trend in land development, between 1990 and 1997. There were 65 lot splits resulting in 109 new lots. Most of these appear to have been created to accommodate additional homes. These subdivision and lot splits took place in nearly all parts of the town except in the village. Most are using existing roads.

On the other hand, the protection of land via some form of public purchase is proceeding along with, and in reaction to, the 'sprawling' residential growth along the roads.

A remarkable discovery is that over half of the town's 22,000 acres are now protected whether because of severe limitations for septic systems or by various forms of public ownership:

- ◆ 6,000 acres are of such soils that development is impossible.
- ◆ 4000 acres are in forest and open space program, indicating that the owners are not considering developing them.
- ◆ 2,000 acres are in farmland program, indicating that development is not desired by the owners
- ◆ Titles or development rights to 2000 acres have actually been transferred to various state, local and educational institutions

Over ½ the acreage in town is now protected from development. Each mile of river or brook protects 25 acres per side via shoreland protection.

Market forces promote 2-3 acre lot sizes. It appears that future development will have to take place on "back lots" currently not served by town roads, or severely constrained by poor unsuitable soils for septic systems.

The pipeline will have minimal impact on land use for two reasons: it cannot be tapped locally, and it passes through such a small part of Bowdoinham.

Some counter-intuitive considerations before planning our future land use.

As part of the consideration for future land use, several concepts that may seem counter intuitive should be considered. The term "subdivision" often evokes concern because the number of units involved cause an immediate sense of great change. House lot by house lot change over a longer period does not cause as much concern because it takes place in small stages. In reality, however, the subdivision review process provides an opportunity to protect natural areas and to locate septic fields, wells, and houses to assure each safety, privacy, and common areas of enjoyment.

Lot by lot development that could take place in any case leaves later arrivals to cope with less than optimal locations because they have to work with existing houses, septic fields, and wells.

Preservation of "common", scenic, recreational, agricultural or natural preserve areas are possible when a subdivision is created. These features are much more difficult to create when parcels are simply "built up" over time by various owners.

Another very practical reason that subdivisions may be seen as beneficial is that those sites are the only ones in town to require a second backup septic site. Septic systems have an average life expectancy of 20 years until failure. Subdivisions will have an easier time dealing with this inevitable problem because of the existing backup site than will those who need to dispose of the existing site material in a "special waste" site before they can begin to construct a new system. (Should the town acquire a site for this material?)

Another concept that may seem counter intuitive is that land is not "saved" by large lot requirements. This is particularly true of the working landscape of forest and farmlands. Selling a one-acre parcel for a house lot does the least harm to the integrity of the remaining landscape. For forestland, the threshold parcel size that will interest a harvester is 50 acres. Having 10 acre lots will create numerous small nature preserves which will be quite pleasant in themselves; but If the aim is to preserve a working forest that can provide lumber then creating lots that do not reach the size threshold of interest to harvesters is the wrong way to proceed.

In a similar fashion if lots are to be sold out of a farm, those lots being of small size and thus removing the least amount of workable land from the farm will help the viability of the farm. If the aim of future ordinances is to protect forest and farming enterprises, then large lot requirements should be understood to be counterproductive.

Land use ordinances

The greatest weakness of the ordinance as a whole is the lack of clear performance standards to guide the Planning Board in its review.

A particularly difficult set of standards is found in Section 1-112-B-6 of the Land Use Ordinance. It requires that the Planning Board "Makes a positive finding based on the information presented to it that the proposed use:

- a. Will not result in unsafe or unhealthful conditions;
- b. Will not result in erosion or sedimentation;
- c. Will not result in water pollution;
- d. Will not result in damage to spawning grounds, fish, aquatic life, bird and other wildlife habitat;
- e. Will conserve shoreland vegetation;
- f. Will conserve visual points of access to waters as viewed from public facilities;
- g. Will conserve actual points of access to waters;
- h. Will conserve natural beauty;
- i. Will avoid problems associated with flood plain development and use."

These standards are copied from the State Shoreland Zoning Guidelines, which were developed in 1971 with very little practical experience. In fact, Maine's Shoreland Zoning Law was one of the firsts in the country. Without additional standards, they present a number of difficulties in their application.

First, in order to make findings on the above criteria, the Planning Board would require much more information than is usually available to it. Second, the standards, if taken literally, are impossible to follow. It is not possible to build or alter a structure without some impact on the environment. Third, determining if indeed the standards are being met places an undue burden on the Code Enforcement Officer. Fourth, they are so rigid that the Planning Board is either forced to devise its own ad hoc standards, which is subjective and time consuming or open the door to bias-driven interpretation.

The Multiple Dwelling Ordinance is a good one, although its applicability to two family dwellings is considered excessive by some. Also, it is not clear,

whether the permit standards apply. If they do, the arbitrary standards (in Section 1-112-1316) could significantly slow the review.

The Subdivision Ordinance may, in theory, accomplish its objectives, but it is not “user friendly” for either the Planning Board or developers. A developer would have to be sophisticated indeed to find the performance standards she/he is expected to follow. Their vagueness makes it difficult both for the developer to know what to propose and for the Planning Board to review it adequately. There is no performance standard section. Particularly noteworthy is the lack of road standards.

This lack of clear standards leaves entirely too much discretion to both the developer and the Planning, Board. It is particularly evident when the town is requested to take over a road in an approved subdivision. It is not likely to meet the town standards, but it is unfair to demand that they do when the subdivision standards were not consistent with the town road standards.

The Site Review Ordinance is at least “reader friendly”. There are problems, however with interpreting applicability. For example, its applicability to agricultural activities and home businesses is not clear. The threshold of size needs to be examined in light of potential impact. The Board may wish to copy more specific standards for commercial, industrial development with respect to parking, traffic, noise and odor from other model ordinances.

Since the Town went further than the State guidelines by including streams in the Shoreland Zone, the shoreland areas of the Town, or at least the legal minimum of 250 feet, are adequately regulated

The present ordinances, including floodplain, zoning and shoreland zoning are not designed to guide the location of new residential or commercial development. The minimum lot size for a buildable lot of land is the same for all non-shoreland locations. Except for market forces such as traffic volume and proximity to other businesses, commercial or light industrial development can take place just as easily in one part of town as another, unless they are water dependent.

There is some confusion resulting from the application of the State Shoreland Zoning Model ordinance to the whole town. The performance standards in the land Use and Shoreland Zoning need to be better coordinated.

Implications

There is no question that the continuation of the present pattern guided by the present ordinances does not prevent “sprawl” as it has been defined through public discussion.

It is difficult and unrealistic to think that growth can be stopped. While public water is available, there is little interest in installing sewers in the Village. Because of the nature of the soils in the Village, the assumed growth area is not necessarily suitable for increased density residential use. Therefore, the current pattern of residential development is likely to continue. However the Village can be and is being redeveloped for vital economic growth.

The Village is the reflection of Bowdoinham's extraordinary sense of place, history, and community. Active, viable village life is evidenced by the renovated Town Hall, the new Waterfront Park the Library and its region wide famous Plant Sale in May, Traditional 4th of July Barbecue, now transformed into Annual Birthday Party on September 18th. All the buildings of the fraternal organizations and two churches are in the Village.

The Town recognizes that it has a responsibility to consider the implications of the type of growth we are likely to experience.

Continuing the present pattern of development will add more vehicle miles, traveled by cars, trucks, and school buses to our roads, increasing the cost for maintenance and plowing.

Our present ordinances do not do much to protect the rural character, agriculture and wildlife habitat, which can still be found in Bowdoinham. These are resources the residents are obviously interested in preserving.

What about the 'Z' word

The word "zoning" is conspicuous by its absence in this comprehensive plan. This does not mean, however that over the next 10 years the townspeople will not want ordinances that include zoning. In a town with housing styles that vary from rustic yurts to elegant shore front homes, it will not be likely that Bowdoinham ever adopts ordinances that govern the height of a lawn, color of a house, placement of a clothesline or where boats are parked.

At some point, however, residents may find it in their interest to consider limits on non-residential uses. This plan shows areas where the town will encourage new commercial activity. This leaves standing the current policy that commercial enterprises are allowed in any part of town. At some point the townspeople may decide to consider limiting the range of those commercial activities allowed anywhere.

The average family lives in their houses for 8 years before moving on. Most people "own" their house via mortgage. A bank may well lend less (require a larger down payment) or charge a higher interest rate when it realizes that there is no limit as to what can be built next door. They must charge for possible loss of value if a toxic waste dump or methadone clinic or slaughterhouse were to go in next door. Both buyer and seller of property would benefit if the bank did not charge a premium for lack of clear limits on future use of neighboring property.

The Survey indicated that few objected to residential owner business and in fact, few objected to many larger stand-alone businesses. But most did indicate that some businesses seemed inappropriate for a residential area. This concept of placing limits on the type of commercial development in residential areas is zoning that this plan does not promote but intends to leave as an option if the townspeople desire it in the future.

Goals, Policies and Strategies

The following goals, policies and strategies will be based on the goals, as stated in other elements of the plan; our sense of the will of the residents as ascertained in the 1992 survey; and discussions held since then.

Goals and Strategies from other Elements in the Plan

The Economic Development

- ◆ Designated areas in Town for future commercial development.
- ◆ Encourage revitalization of the Village Center.

The Natural Resources Committee Recommended

- ◆ Identified mapped wetlands should be given a 250' Resource Protection Zone.
- ◆ Subdivisions should be designed so that mapped natural resource areas such as agricultural land, deer wintering habitat or wetland can be protected, within the subdivision.

The Agricultural Subcommittee recommended:

- ◆ Maintain forest and farmland for its current and potential use for farming and forestry.
- ◆ Develop an ordinance which requires a setback between cropland and houses and wells to minimize conflicts between farmers and adjacent landowners.

The Forestry Subcommittee recommended:

- ◆ Safeguard the Town's forest resources from development that threatens that resource.

The School Facilities Subcommittee recommended

- ◆ Improve the planning capability to accommodate additional students without sacrificing the quality of the children's learning environment

The Water Supply Subcommittee recommended:

- ◆ Prevent groundwater contamination to protect second public water supply wellhead area and private wells

We Find That

Current discussions by the Selectmen, Planning Board and members of the Comprehensive Planning Committee came to the following conclusions:

1. Conservative population estimates indicate that Bowdoinham will have to accommodate at least 665 more people by the year 2008. Assuming 2.5 persons per unit, that means 265 residential units;
2. There is not much support at this time for sewerage in the Village
3. Unless we sewer, there is no room for new buildings in the Village ;
3. Bowdoinham is exceptional in the amount of shore frontage it has on Merry Meeting Bay: the Cathance, the Kennebec, and the Abagadasset Rivers.
4. There is a high degree of agreement to protect natural resources and open space;
5. While there is strong resistance to conventional zoning, there is support for tailoring development to preserve the identified natural resources and agriculture;
6. Most of the road frontage has been used up; future development will take place in back lands;
7. The Committee prefers to use incentives and performance standards rather than zoning to guide development.
8. There is interest in exploring "smart development" to avoid inefficient and costly development of roads to access the backlands.
9. The Town may not prohibit individual mobile homes, but may regulate mobile home parks as long as the regulations are not intended to exclude mobile homes. (Title 30-A, § 4358)
10. Bowdoinham is unique in still having a distinct sense of community. People identify with the Bowdoinham of today and value its historic traditions. There is a desire to keep Bowdoinham as is and maintain its rural nature and traditional pattern of land use;
11. Bowdoinham's land use ordinances make it difficult to guide the developer, the Planning Board, or the Code Enforcement Officer. They

are archaic; contain inconsistent standards and vague criteria; have unclear applicability and lack specific enforceable performance standards.

12. While recent assistance by the Code Enforcement Officer and the Town Clerk have lightened the burden on the volunteer Planning Board, further professional assistance is needed to update, rewrite and coordinate ordinances, assist developers and the Planning Board in its review process and establish effective administrative and record keeping procedures.

Future Land Use Goals Policies and Strategies

The Future Land Use Plan is based on the following two key goals of the Bowdoinham Comprehensive Plan 2000:

Goal 1- To Protect the Natural Resources Valued by the Community

Goal 2- To Protect The Traditional Village, The Heart Of The Community, while Enhancing and Encouraging its Economic Vitality.

A. Residential Growth Areas

The residential growth areas will be those areas, which have either few or moderate constraints to development. They are derived from the Composite Constraint Map.

- ◆ Few Constraints areas (shown in white on the Composite Constraint Map) include land with few natural resource constraints and high or medium soil suitability for septic systems. This category of land is the most suitable for development with few adverse impacts on natural resources. Installing acceptable septic systems is not likely to be unduly expensive.
- ◆ The Moderate Constraint areas- (widely spaced lines) are constrained by proximity to active farmland, mapped deer yards, wetlands.

Areas the town considers appropriate for residential or commercial growth are depicted on the map titled " Most Suitable for Future Growth (fold out map opposite this page) These areas are shown to have few or moderate constraints to growth on the composite constraint map.

As the title of the map states, these areas are most suitable. It does not mean that the Town will aggressively promote their development.

The lines on this map are meant to be interpreted generally. At the time the area is developed, site specific information will be needed to determine the actual suitability of a

particular parcel. Also, the little dashed lines are meant as mapping symbol, they do not represent houses.

Policy

It shall be the policy of the Town to encourage **new residential development** in areas best suited for it, areas with few or no natural constraints. These areas can be further defined as those areas which:

- ❖ do not contain, or are not adjacent to: farms enrolled in the Farm and Open Space Tax Programs, parcels on mapped highly productive agricultural soil or actively farmed;
- ❖ have soils which are highly or moderately suitable for septic system; or
- ❖ can be developed without major impact on mapped high value bird habitat, wetlands, waterfowl and bald eagle nesting sites, deer yards, 100 year flood plains or aquifers.

Strategies for Residential Growth Areas

1. Develop ordinances that direct residential growth towards the growth areas and away from areas with severe constraints.
2. Devise incentives that will clearly make it favorable to develop in growth areas. For example, a town would agree to accept a road if it meets the performance standards appropriate to the area being developed
3. Discourage sprawl by exploring, then devising, impact assessment (and possibly impact fees) to offset the cost of developing in more remote areas of the Town
4. Review Site Plan, Subdivision, Shoreland Zoning Ordinances and Building Permit ordinances to allow in-law apartments.
5. Revise or establish road standards for subdivisions, which are appropriate to the natural resources of the area.
6. Develop ordinances to limit curb cuts consistent with 23 MRSA 704 as amended in 1999 and the Guidelines in "Access Management Improving the Efficiency of Maine Arterials"

B. Commercial or Industrial Growth

Commercial or industrial growth areas will be those areas

- a. with few or moderate constraints, as shown on composite constraint map;
- b. on existing state or state-aid roads and
- c. with easy access to 3-phase power;

- d. in the Village and where reuse of existing buildings is possible; and
- e. where business or light manufacturing, whether home or freestanding, can be accommodated to residential use in its vicinity.

Policy

Consistent with the other key goal of this plan , " **Protect The Traditional Village, The Heart Of The Community, while Enhancing and Encouraging its Vitality "**.

It shall be the Policy of the Town of Bowdoinham to

1. Encourage the revitalization of the Village Center by both supporting existing businesses, services and attracting new business;
2. New business in the Village should blend in size and scale with existing traditional buildings;
3. Encourage new manufacturing, light industry, warehouse buildings west of the I-95 Interstate;
4. Maintain the unique character of the Village by encouraging businesses to locate within or adjacent to the Village and to discourage the location of retail commercial activity in locations that would detract from Village as a center of retail activity in the community;
5. Work with entrepreneurs wishing to expand or build new, to locate in appropriate areas.

Strategies for Commercial Growth Areas

1. Establish a Village Mixed Use District where design standards assure that new development and re-use of buildings is consistent, in size and scale, with existing traditional uses.
2. Establish a Highway Light Industry, Warehouse, and Manufacturing District where design standards limit the size of the buildings and parking area and establish significant natural buffers/ setbacks from existing residential structures. The Committee would like to limit the size of buildings to no more than 40,000 sq. feet; its height to no more than 30 feet and total developed area for each business, including parking lot no more than 2 acres, or ~80,000 sq. feet.
3. Encourage the upgrade and use of existing buildings in the Village by
 - a. Surveying existing businesses to find out what their needs are and under what conditions they would move into empty buildings
 - b. Surveying of the needs of local consumers, what would attract them and keep resources in the community;
 - c. Making a plan to make the improvements which the two surveys indicate are needed, including grant applications.

- d. Seek out Small Community Grants to repair malfunctioning systems or for Economic Development Infrastructure, or CDBG funds to design small community sewer system to address the dilemma that confronts the village residents regarding sanitary waste disposal.
4. Amend site review ordinance to assure visual screening, minimize noise, odor, traffic, impact on the economic viability of the village or other off-site impacts on residents.
5. Designate traditional commercial areas "General Development District" within the Shoreland Zone.
6. Amend the Site Review Ordinance to allow the Planning Board to consider the impact on the Village of new businesses located at the intersection of I-95

C. Mobile Home Parks

Policy

It shall be the policy of the town to encourage mobile homes to locate in existing mobile home parks or to pre-designated areas suitable for mobile home parks. Because state law allows 20,000 sq. feet minimum lot size in mobile home parks, greater care shall be taken to protect public health.

Strategies for locating mobile home parks:

1. Mobile Home parks will be encouraged to locate in the areas which
 - a. show few constraints on the composite constraint map;
 - b. have soils highly suited for septic systems as shown on the soil suitability map (Because the minimum lot size can be 20,000 square feet).
 - c. are accessible to public water lines.
2. If public water is not available, work with the developer to install community septic system and/or public water supply well
3. Assure at least 300 feet separation between septic system and wells.

D. Rural Areas

Rural areas which are severely constrained from development because either they are in Farm and Open Space Tax Program, or on soils severely constrained for septic systems, are on identified, mapped natural resources or in Resource Protection District under the Shoreland Ordinance.

Policy

Since it is a key goal of this plan to protect natural resources, agricultural and forest land, it shall be the policy of the Town to protect agricultural and forest lands enrolled in the tax programs, mapped natural resource areas and potential public water supply areas whenever they might be identified.

A major objective will be to minimize the total amount of site disturbance

Strategies for Preserving Rural Areas

While we cannot prevent individual homes from locating anywhere except in Resource Protection Districts, we can guide subdivisions and new commercial buildings that trigger the site review ordinance to conform to performance standards necessary to protect the natural resource we seek to protect.

These strategies are based on the assumption that Bowdoinham is small enough, the frequency of requests for permits is manageable, and the limitations of the amount of land available will allow for this site specific attention.

To this end, the strategies will include

1. Seeking the assistance of FEMA, IF&W and DEP in developing appropriate standards for the resource being protected.
2. Varying the density according to the resource being protected. For example in areas identified by IF&W as being a wildlife habitat, deer yard or eagle nest, we would seek the assistance of IF &W on what density or pattern of clustering would minimize the impact on wildlife habitat or corridors.
3. Incorporating “feature” driven performance standards for all new construction. An example of such a feature is agricultural land. The performance standard would require 150’ setback from the edge of the farm field for septic systems, wells, or homes.
4. Encouraging planned subdivisions tailored to fit the natural resource siting houses in creative patterns in order to maximize privacy while providing buffers for natural resources or active farmlands.

5. Allowing adaptation of houses for "mother-in-law" additions. It makes more sense to allow a dwelling to contain a second kitchen than to require an entire second dwelling be constructed on the lot. It makes the living more affordable and keeps the landscape more rural.

6. Revising Subdivision Ordinance to allow Planning Board flexibility in lot sizes and road layouts for example by:

- a. Setting up a process for determining rural lot sizes which allow for setting aside natural resource protection areas and
- b. Requiring lot sizes to be sufficient size to allow 300' separation between wells and septic system in areas with low or very low soil suitability,
- c. Requiring the recommended buffer zones to protect wetlands, wildlife habitat, or erosive shorelines.
- d. Minimizing curb cuts to state-aid or town roads to no more than one per 200 feet in one-quarter mile
- e. Developing road access ordinance which gives incentives for limiting the extent to which new lots directly access major roads

7. Protecting public and private water supplies by requiring all residents to have more than 100 feet separation between wells and septic systems

8. The Code Enforcement Officer shall report annually in the Town report the acres of Rural Area land, which have been developed or changed from current agricultural use. The Code Enforcement Officer will be guided in determining the location of such areas by the "Detailed Composite Development Constraint Map, (a reduced version of which is included opposite page 140.)

9. If the acres of land taken out of its current use in the severely constrained or protection areas exceeds 5% of the total acres in the Rural Area or 750 acres, then the Selectmen shall appoint a Task Force to review the effectiveness of the implementation strategies as proposed in this plan and the ordinances in place during the preceding year of this review.

The Task Force will be charged by the Selectmen to make recommendations to improve the programs and ordinances to more effectively guide development.

10. The Planning Board shall work with a professional planner and the Code Enforcement Officer to amend the appropriate land use ordinances, including the Construction of Permanent Dwelling, Land Use Regulation and Shoreland Zoning, Subdivision and Site Plan Review Ordinances. The ordinances will be amended to require notification of an applicant who

wishes to build on severely constrained land or in an area where there is likely to be natural or archaeological resources. The applicant will be notified in writing that there are likely to be greater costs for developing in that area. For example they might need a more expensive septic system or foundations and landscaping will be difficult. The ordinance will also authorize the Planning Board to add special conditions to the permits as may be necessary to protect natural or historical resources.

E. Preserving Community

Goal

Development should be consistent with traditional pattern of land use and blend with existing traditional buildings.

Strategies

Allow industrial and commercial uses along waterfront consistent with historic uses

1. Our strategies to support our goals of protecting our natural resources and the traditional village will support the goal of Preserving Community.
2. Encourage creative multiple uses of large historic homes, making them economically viable for the owners by reviewing Multiple-Dwelling Ordinance and establishing appropriate performance standards for use of these buildings.
3. Protect the retail business activity in the Village, which offers casual meeting places for the community.

F. Land Use Ordinances

Goal

Bowdoinham is a small town. The goal is to develop a simplified land use ordinance that effectively protects the public health and the resources it wishes to protect. The ordinance shall give clear direction to applicants and assure legally defensible decision making process.

Strategies:

1. Integrate the current land use ordinances using the town wide impact approach. The ordinance shall:
 - a. clarify applicability;
 - b. contain performance standards such as lot size, set backs, roads, screening which can be applied to all developments or construction;

- c. include criteria for decision making keyed to the performance standards The Planning board will need to make findings to assure itself that the proposed development will meet the protection goals and performance standards in the ordinance.
- d. consider the impact of major subdivision on public facilities including community school, water, fire and police protection.
- 2. Develop an application form which guides the Planning Board to make the necessary findings
- 3. Add specific standards for commercial and industrial uses throughout the town.

G. Administering the Planning Board

Goal

The Town shall have a volunteer Planning Board which has the tools, procedures, record keeping system, training and guidance to perform its responsibility in a timely, legally defensible manner.

Strategy

Contract with or hire part –time, locally available professional assistance to

- a. integrate ordinances as outlined above;
- b. conduct research on incentive and impact fee approaches;
- c. develop application form;
- d. prepare applicant for the review process;
- e. prepare summaries of facts and issues for Planning Board;
- f. work with Code Enforcement Officer to establish a filing system, indexed to map and lot number , date of application and permit;
- g. provide training and educational literature on land use management and court decisions.

REGIONAL CONSIDERATIONS

There are four areas where adjoining towns affect the future of Bowdoinham. To the North is the Richmond Utility District, which could serve the northern part of Bowdoinham. This could have resulted in development of greater density in what is now rural agricultural land. This likelihood has been greatly reduced by the purchase of the development rights of the former Alice Wheeler farm. This large parcel, 200 acres of which is in Bowdoinham, was scheduled for 150 dwelling units to be serviced by Richmond utilities, but will now not happen.

The concerns about the town's well located in the adjoining town of Bowdoin are addressed in the Water Supply section of the plan.

The desire to keep a local elementary school despite being part of SAD #75 is discussed in the School Facilities section.

The impact of the nearby areas just beyond the town's borders will have a significant impact on Bowdoinham's future. This town is located between the larger communities of Brunswick, Lewiston-Auburn, Gardiner, and Augusta. As with the other larger communities in the State these are all experiencing population decline just as all the nearby small towns are experiencing population growth.

The larger communities have the jobs, hospitals, colleges, stores, restaurants, and entertainment. Despite these advantages, the population is moving to more rural areas, causing the much-publicized "sprawl". The larger communities also have facilities for dealing with drug problem and those of mental illness. Those who need those services are drawn to them. When newspapers report that children in the larger communities can no longer be let off the school bus in front of their houses but must be taken to the local Credit Union for their safety, one can understand why population in the communities is declining.

Those who find the larger community no longer a pleasant place to live seek the buffer space and "move to the country". Bowdoinham with its reputation for good schools, pleasant community, and rural nature is a natural magnet. One of the side effects may be that it is more difficult to encourage people to move to "growth " areas of town where density will be greater because that was what people chose to get away from.

PUBLIC INVOLVEMENT

This plan has been prepared over a period of 9 years. From the inception of the process, there was an unprecedented effort to assure genuine involvement of the residents in the preparation of the plan:

- ◆ 23 residents, community leaders or activists, were interviewed in depth
- ◆ 43 people were actively involved in committees – of the whole or one for each element of the plan plus the survey
- ◆ there were 6 meetings of the committee of the whole, with average attendance of 25
- ◆ there were two advertised public meetings: one on economic development with outside experts and another one on Village Planning.

A citizen survey was carefully developed through many drafts, and three committee meetings. They were mailed to all 818 households, then picked up by committee members. 365 were received, a 45% response. The results were presented at a well-attended meeting. Seven years having gone by since the survey was taken. The committee decided to use only those responses which indicated a strong consensus. The assumption is that when opinions are held by such a super majority they are not likely to have changed significantly.

The first phase ended in '93 when the consultant delivered all the completed elements (hard copy as well as disc)) except for the Future Land Use Plan. That was prepared through the analysis phase but never discussed

Momentum was diminished when the Growth Management Act was significantly watered down. The chair resigned because of illness in his family. Change in selectmen and town managers, twice, removed support for completion. In addition, the company that was to do the mapping, IEP, was bought out and maps were lost.

The dormancy lasted until about 1997 when GPCOG was contacted to help finish the plan and the maps. A small committee was reconstituted, elements were updated, but after a while the Committee lost interest again.

In June 1999 the original consultant was rehired to "format" the original and updated plan. The remaining Committee mostly the three, by then, ex-Selectmen who had been involved from the beginning, augmented by the Planning Board met three times to develop and discuss the Future Land Use Plan.

Community members who were involved in the preparation of this plan were:

Dan Billings
George Christopher,
Gerry Curtis
Jim Fisher
Ottavio Lattanzi
Frances Pauling,
David Rineheimer
Carl Smith
Liz Webster

Kate Brinsmade
Frank Connors
Francis Cushing
Pete Galle
Michael Mahan
Dan Peaco
Wayne Sanford
Dawn Stephenson

Frank Burroughs
Kurt Cressey
Ed Friedman
David Hagen
K & R Mayo
Linwood Rideout
Brian Smith
Karin Tilburg

Demonstrating extraordinary commitment to their community and this plan were the three former selectmen who were the true midwives of this plan, George Christopher, Frank Connors and Karen Mayo. Performing a most essential labor of love was Leslie Anderson who edited the whole document.

We acknowledge GPCOG 's Rick Seeley for designing the maps. The concept of the natural resource constraint overlay system served superbly to be both the basis and the display of the Future Land Use plan. We also are grateful for Kris Somers and Berry Jackson, for cheerfully making our planner concepts a beautiful reality.

The effort was coordinated at its beginning, 1992-94 and again to its completion in 1999-2000 by Community Planning Consultant, Esther Lacognata.

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